Acer AL2251W

Service Guide

Service Guide Version and Revision

Version	Release Date	Revision History	TPV model
A00	Sep-29-2006	Initial Release	TC6MMADKWGAGACP

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Conventions

The following conventions are used in this manual:

Screen messages	Denotes actual messages that appear on screen.
Note	Gives bits and pieces of additional information related to the current topic.
Warning	Alerts you to any damage that might result from doing or not doing specific actions.
Caution	Gives precautionary measures to avoid possible hardware or software problems.
Important	Remind you to do specific actions relevant to the accomplishment of procedures.

Preface

Before using this information and the product it supports, please read the following general information.

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office may have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Warning: (For FCC Certified Models)

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.
3. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification to this equipment. It is the responsibility of the user to correct such interference.

As ENERGY STAR® Partner our company has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Warning:

To prevent fire or shock hazard, do not expose the monitor to rain or moisture. Dangerous high voltages are present inside the monitor. Do not open the cabinet. Refer servicing to qualified personnel only.

Precautions

- Do not use the monitor near water, e.g. near a bathtub, washbowl, kitchen sink, laundry tub, swimming pool or in a wet basement.
- Do not place the monitor on an unstable trolley, stand, or table. If the monitor falls, it can injure a person and cause serious damage to the appliance. Use only a trolley or stand recommended by the manufacturer or sold with the monitor. If you mount the monitor on a wall or shelf, uses a mounting kit approved by the manufacturer and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet are provided for ventilation. To ensure reliable operation of the monitor and to protect it from overheating, be sure these openings are not blocked or covered. Do not place the monitor on a bed, sofa, rug, or similar surface. Do not place the monitor near or over a radiator or heat register. Do not place the monitor in a bookcase or cabinet unless proper ventilation is provided.
- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- The monitor is equipped with a three-pronged grounded plug, a plug with a third (grounding) pin. This plug will fit only into a grounded power outlet as a safety feature. If your outlet does not accommodate the three-wire plug, have an electrician install the correct outlet, or use an adapter to ground the appliance safely. Do not defeat the safety purpose of the grounded plug.
- Unplug the unit during a lightning storm or when it will not be used for long periods of time. This will protect the monitor from damage due to power surges.
- Do not overload power strips and extension cords. Overloading can result in fire or electric shock.
- Never push any object into the slot on the monitor cabinet. It could short circuit parts causing a fire or electric shock. Never spill liquids on the monitor.
- Do not attempt to service the monitor yourself; opening or removing covers can expose you to dangerous voltages and other hazards. Please refer all servicing to qualified service personnel
- To ensure satisfactory operation, use the monitor only with UL listed computers which have appropriate configured receptacles marked between 100 - 240V AC, Min. 5A.
- The wall socket shall be installed near the equipment and shall be easily accessible.

Special Notes On LCD Monitors

The following symptoms are normal with LCD monitor and do not indicate a problem.

Notes

- Due to the nature of the fluorescent light, the screen may flicker during initial use. Turn off the Power Switch and then turn it on again to make sure the flicker disappears.
- You may find slightly uneven brightness on the screen depending on the desktop pattern you use.
- The LCD screen has effective pixels of 99.99% or more. It may include blemishes of 0.01% or less such as a missing pixel or a pixel lit all of the time.
- Due to the nature of the LCD screen, an afterimage of the previous screen may remain after switching the image, when the same image is displayed for hours. In this case, the screen is recovered slowly by changing the image or turning off the Power Switch for hours.

Table Of Contents

Monitor Features

Introduction

Scope

This specification defines the requirements for the 19" MICROPROCESSOR based Multi-mode supported high resolution color LCD monitor. This monitor can be directly connected to general 15-pin D-sub VGA connector and 24-pin DVI connector, also supports VESA DPMS power management and plug & play function. There is a build-in stereo audio amplifier with OSD control to drive a pair of speakers.

Description

The LCD monitor is designed with the latest LCD technology to provide a performance oriented product with no radiation. This will alleviate the growing health concerns. It is also a space saving design, allowing more desktop space, and comparing to the traditional CRT monitor, it consumes less power and gets less weight in addition MTBF target is 50k hours or more.

Chart of AL2251W

Panel	M220Z1-L01
Signal Interface	D-Sub 15-pin
	DVI 24-pin
Sync Type	Separate / Compatible
Color Temp User Adjust	Support
DDC	DDC2B
Speaker	1.5W + 1.5W (Rated power)
Headphone Jack	3.5mm stereo phone jack
Microphone Jack	No
USB Hub	Not support
Tilt / Swivel	Yes / No

Electrical Requirements

Standard Test Conditions

All tests shall be performed under the following conditions, unless otherwise specified.

Ambient light	:	Dark room
Viewing distance	:	40 cm for LCD performance, 20 cm for LCD failures
Warm up time		
All specifications	:	＞30 minutes
Fully functional	:	5 seconds
Measuring equipment	:	Chroma 7120 signal generator or equivalent, directly
		Connected to the monitor under test.
		Minolta CA100 photometer, or equivalent
Control settings		
User brightness control	:	Set to Factory preset value (cut off raster)
User contrast control	:	T Set to factory preset value, which allows that the brightest two of 32 linear distributed gray-scales (0～ 700mv) can be distinguished.
User red/white balance,		
Green/white balance and		
Blue/white balance control	:	In the center (unless otherwise specified)
Power input	:	230V± 5%
Ambient temperature	:	20±5℃
Display mode	:	1680x1050, 60 Hz, all white

Measurement systems

The units of measure stated in this document are listed below:

1 gamma = 1 nano tesla

1 tesla = 10,000 gauss

cm = in x 2.54

Lb = kg x 2.2

Degrees F = [°C x 1.8] + 32

Degrees C = [°F - 32]/1.8

u' = 4x/(-2x + 12y + 3)

v' = 9y/(-2x + 12y + 3)

x = (27u'/4)/[(9u'/2) - 12v' + 9]

y = (3v')/[(9u'/2) - 12v' + 9]

nits = cd/(m2) = Ft-L x 3.426

lux = foot-candle x 10.76

LCD Monitor General Specification

LCD Panel	Driving system	TFT Color LCD
	Size	55.87cm(22")
	Pixel pitch	0.282mm(H)x 0.282mm(V)
	Brightness	300cd/m2 (Typical)
	Contrast	800:1(Typical)
	Viewable angle	160° (H) 160° (V)
	Response time	5ms
Input	Video	R,G,B Analog Interface
		Digital interface(Only Dual-Input Model)
	H-Frequency	31KHz – 80KHz
	V-Frequency	56-75Hz
Display Colors		16.2M Colors
Dot Clock		146.25MHz
Max. Resolution		1680 x 1050 @60Hz
Plug & Play		VESA DDC2B TM
Power Consumption	ON Mode	≤ 49W
	OFF Mode	≤ 1W
Input Connector		D-Sub 15pin
		DVI-D 24pin (DVI w/HDCP, Only Dual-Input Model)
Input Video Signal		Analog:0.7Vp-p(standard), 75 OHM, Positive
		Digital signal (Only Dual-Input Model)
Maximum Screen Size		Horizontal : 473mm Vertical : 296mm
Power Source		100~240VAC,47~63Hz
Environmental Considerations		Operating Temp: 0° to 40°C Storage Temp.: -20° to 60°C Operating Humidity: 10% to 90%
Dimensions		512.4X434X173.5(W×H×D)mm
Weight (N. W.)		6.5kg Unit (net)

External Controls:	Switch	• Auto Adjust Key • </Volume • >/ Volume • Power Button • MENU
	Functions	• Contrast • Brightness • Focus • Clock • H.Position • V.Position • Input signal Selection (Only Dual-Input Model) • Language • Auto configuration (only Analog-input Model) • (Warm) Color • (Cool)Color • RGB Color temperature • Reset • OSD position . timeout • Display information • Exit
Power Consumption	(Maximum)	49 Watts
Audio Output		Rated Power 1.5W rms (Per channel)
Regulatory Compliance		CUL, FCC, VCCI, CCC, MPR II, CE, TÜV/GS, TCO'03, UL, ISO13406-2

LCD Panel Specification

LCD Panel Model (M220Z1-L01)

- Super wide viewing angle
- High contrast ratio
- Fast response time
- High color saturation (EBU Like Specifications)
- WSXGA+ (1680 x 1050 pixels) resolution
- DE (Data Enable) only mode
- LVDS (Low Voltage Differential Signaling) interface

General Specifications

Item	Specification	Unit
Diagonal size	558.68	mm
Active Area	473.76x296.1	mm
Bezel Opening Area	477.7 (H) x 300.1 (V)	mm
Driver Element	a-Si TFT active matrix	-
Pixel Number	1680 x R.G.B. x 1050	pixel
Pixel Pitch	0.282(H) x 0.282(V)	mm
Pixel Arrangement	RGB vertical stripe	-
Display Colors	16.7 millions	color
Transmissive Mode	Normally White	-
Surface Treatment	Hard coating (3H), AG (Haze 25%)	-

Mechanical Specification

Item		Min.	Typ.	Max.	Unit
Module Size	Horizontal(H)	(493.2)	(493.7)	(494.2)	mm
	Vertical(V)	(319.6)	(320.1)	(320.6)	mm
	Depth(D)	16	16.5	17	mm
Weight				2800	g
I/F connector mounting position		The mounting inclination of the connector makes the screen center within ±0.5 mm as the horizontal.			

Optical Specifications

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Color Chromaticity	Red	Rx	θ_X=0°, θ_Y =0° CS-1000T	Typ – 0.03	(0.644)	Typ + 0.03	
		Ry			(0.333)		
	Green	Gx			(0.287)		
		Gy			(0.601)		
	Blue	Bx			(0.153)		
		By			(0.077)		
	White	Wx			0.313		
		Wy			0.329		
	Color Gamut	C.G%			68	---	%
Center Luminance of White		L_C		(255)	(300)	---	cd/m^2
Contrast Ratio		CR		(450)	(700)	---	-
Response Time		T_R	θ_X=0°, θ_Y =0°	---	(2)	(7)	ms
		T_F		---	(3)	(8)	ms
White Variation		δW	θ_X=0°, θ_Y =0° BM-5A	---	(1.25)	(1.40)	-
Viewing Angle	Horizontal	θ_X+		(75)	(85)	---	Deg.
		θ_X-		(75)	(85)	---	
	Vertical	θ_Y+		(70)	(80)	---	
		θ_Y-		(70)	(80)	---	

Test Conditions

Item	Symbol	Value	Unit
Ambient Temperature	Ta	25±2	°C
Ambient Humidity	Ha	50±10	%RH
Supply Voltage	V_{CC}	5.0	V
Input Signal	According to typical value in "3. ELECTRICAL CHARACTERISTICS"		
Inverter Current	I_L	(7.0)	mA
Inverter Driving Frequency	F_L	61	KHz
Inverter	SUMIDA H05 5307		

Supported Timing

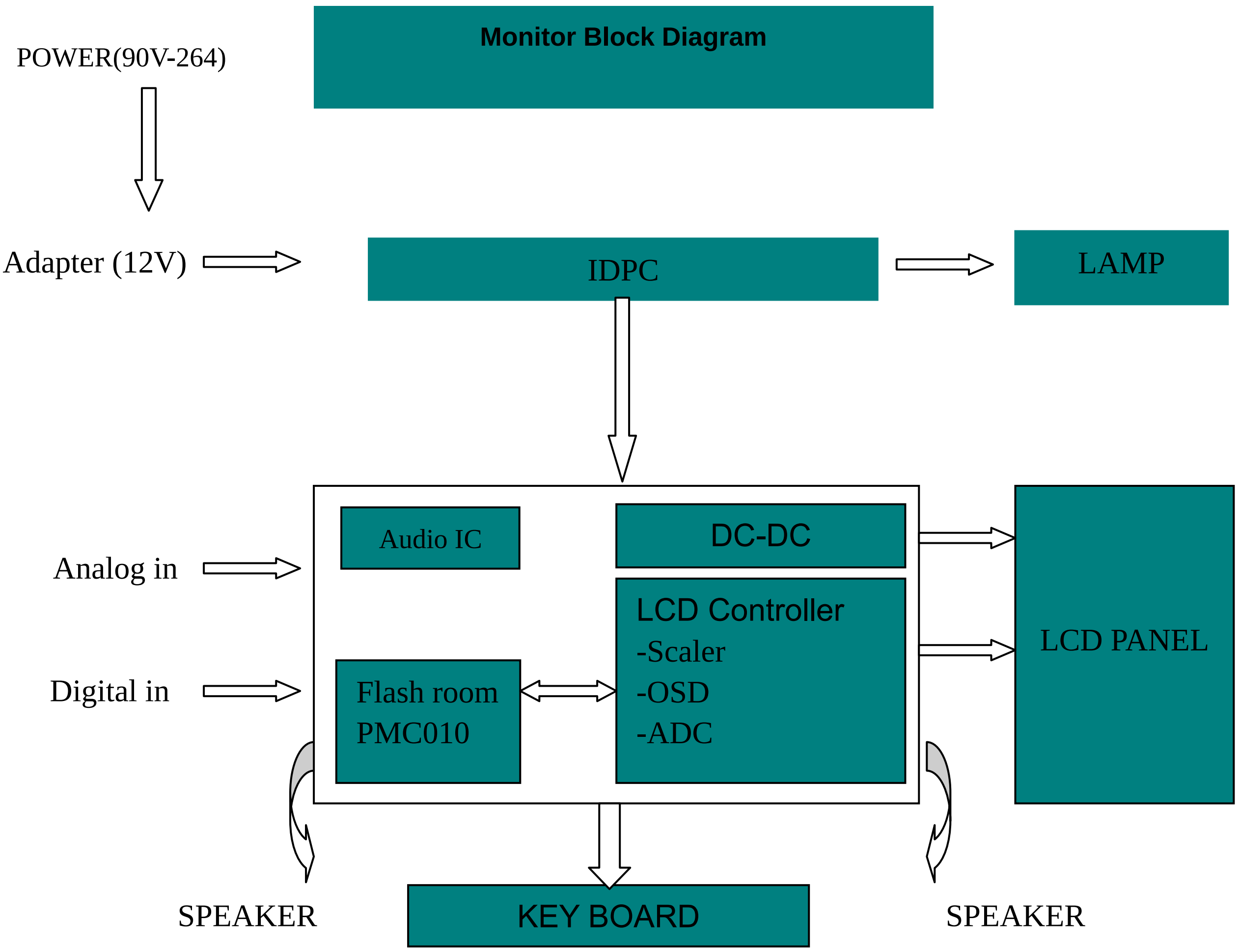
VESA MODES							
			Horizontal		Vertical		
Mode	Resolution	Total	Nominal Frequency +/- 0.5kHz	Sync Polarity	Nominal Freq. +/- 1 Hz	Sync Polarity	Nominal Pixel Clock (MHz)
VGA	640x480@60Hz	800 x 525	31.469	N	59.940	N	25.175
	640x480@72Hz	832 x 520	37.861	N	72.809	N	31.500
	640x480@75Hz	840 x 500	37.500	N	75.00	N	31.500
SVGA	800x600@56Hz	1024 x 625	35.156	N/P	56.250	N/P	36.000
	800x600@60Hz	1056 x 628	37.879	P	60.317	P	40.000
	800x600@72Hz	1040 x 666	48.077	P	72.188	P	50.000
	800x600@75Hz	1056x625	46.875	P	75.000	P	49.500
XGA	1024x768@60Hz	1344x806	48.363	N	60.004	N	65.000
	1024x768@70Hz	1328x806	56.476	N	70.069	N	75.000
	1024x768@72Hz	1304x798	57.7	P	72	P	78.4
	1024x768@75Hz	1312x800	60.023	P	75.029	P	78.750
SXGA	1280x1024@60Hz	1688x1066	63.981	P	60.020	P	108.000
	1280x1024@70Hz	1688x1066	74.4	P	70	P	124.9
	1280x1024@72Hz	1688x1066	77.9	P	72	P	134.6
	1280x1024@75Hz	1688x1066	79.976	P	75.025	P	135.000
	1280x960@60Hz	1800x1000	60	P	60	P	108
	1440x900@60Hz	1904x934	55.93	P	60	P	106.5
WSXGA	1680x1050@60Hz	2240x1089	65.29	N	59.95	P	146.25
IBM MODES							
			Horizontal		Vertical		
DOS	720x400@70Hz	900 x 449	31.469	N	70.087	P	28.322
DOS	640x350@70Hz	800 x 449	31.469	P	70.087	N	25.175
XGA	1024x768@72Hz	1304 x 798	57.515	P	72.1	P	75.000
MAC MODES							
VGA	640x480@67Hz	864x525	35.000	N	66.667	N	30.240
SVGA	832x624@75Hz	1152x667	49.725	N	74.551	N	57.2832
XGA	1024x768@60Hz	1312x813	48.780	N	60.001	N	64.000
	1024x768@75Hz	1328x804	60.241	N	74.927	N	80.000

Monitor Block Diagram

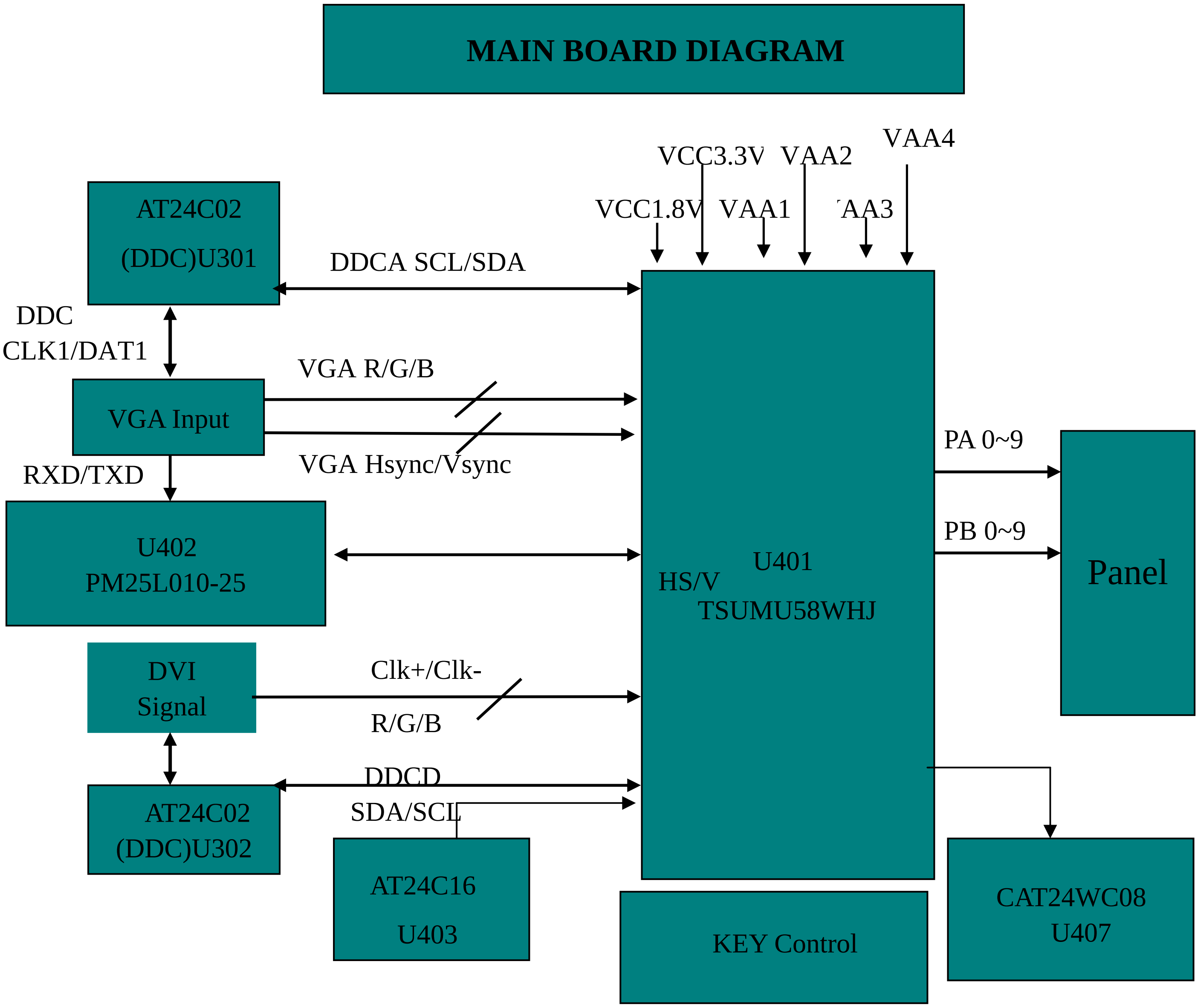
The LCD MONITOR will contain a main board, a power board, and keypad board which house the flat panel control logic, brightness control logic and DDC.

The Inverter board will drive the backlight of panel and the DC-DC conversion,

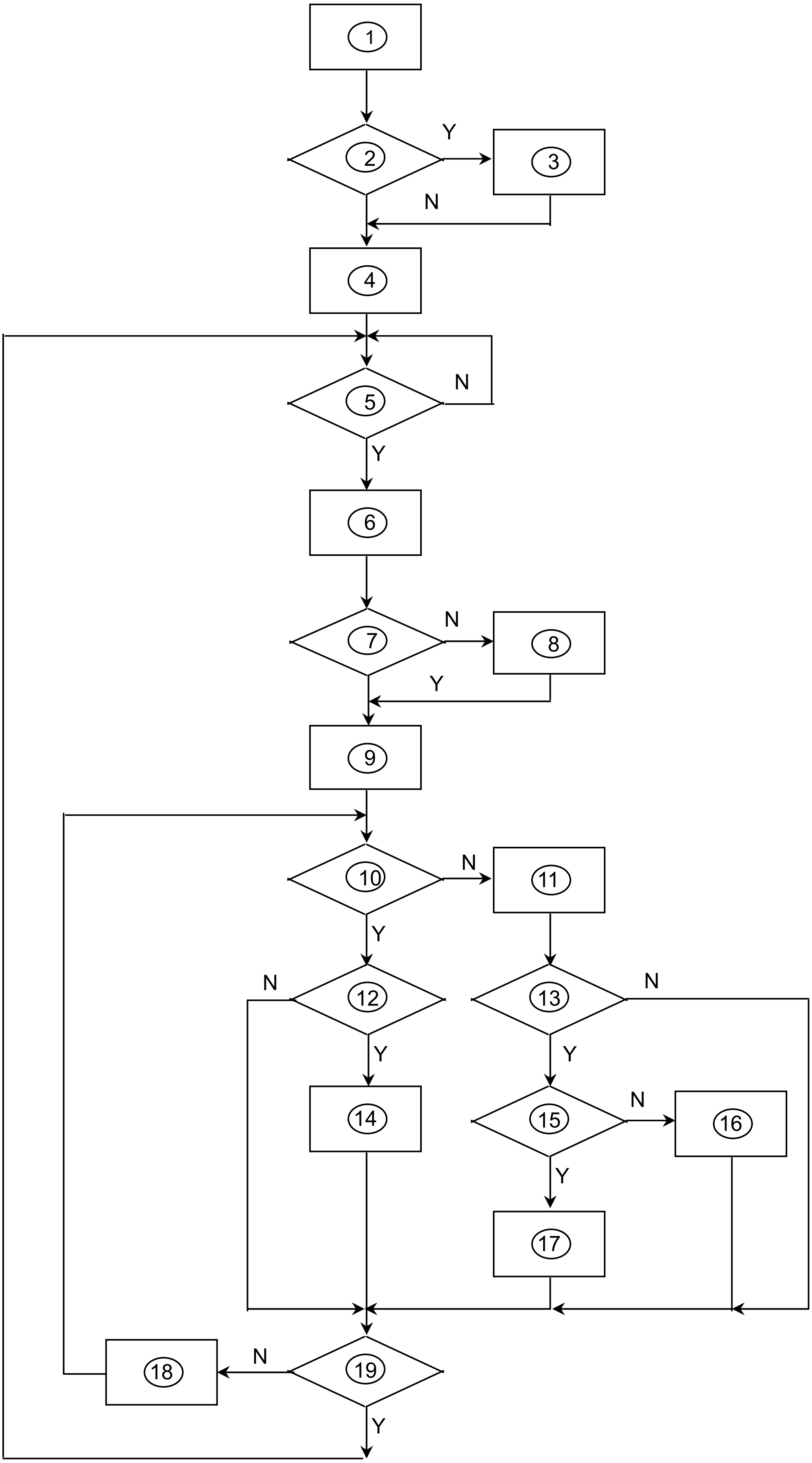
The Adapter will provides the 12V DC-power to inverter/power board.



Main Board Diagram



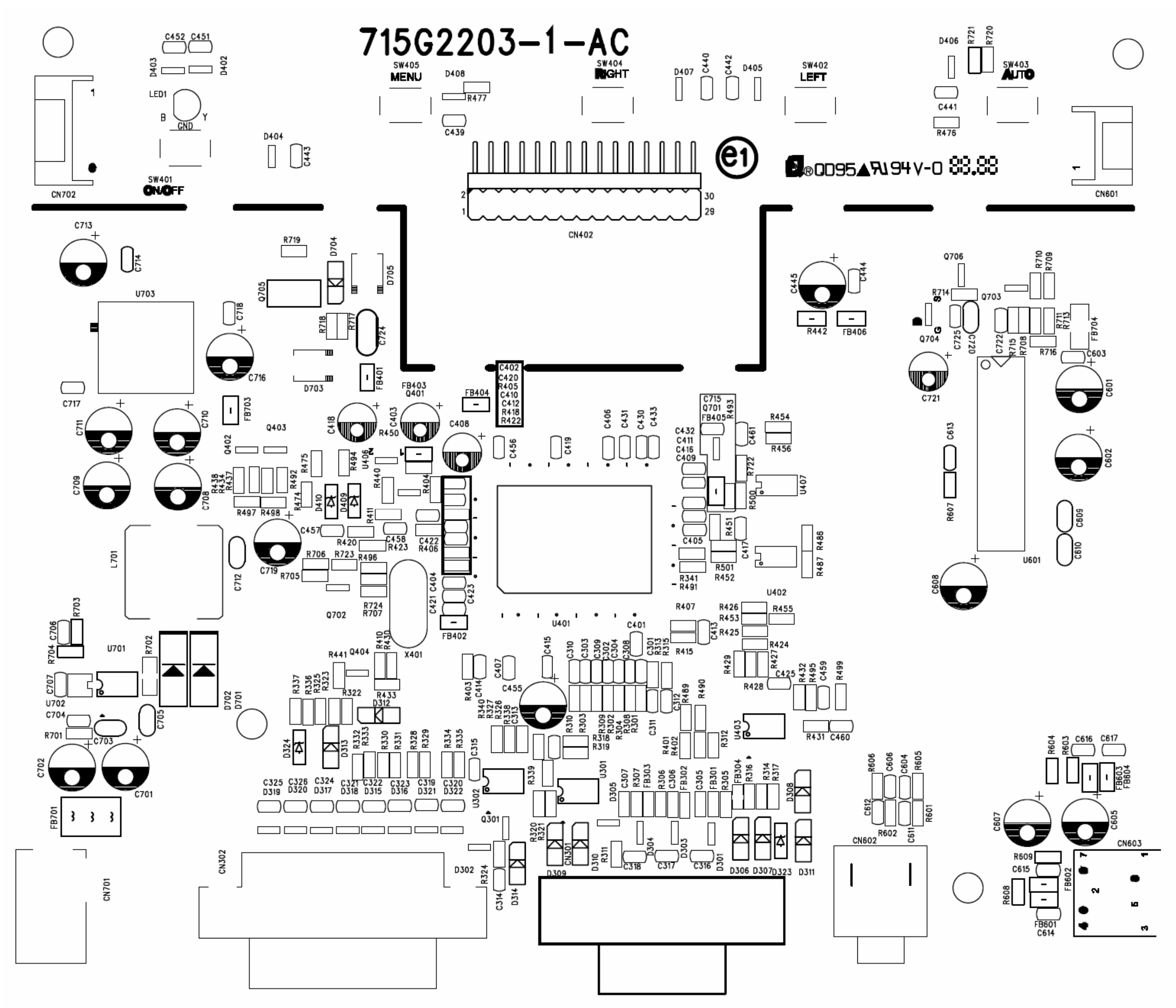
Software Flow Chart



Remark:

1) MCU initializes.
2) Is the EEPROM blank?
3) Program the EEPROM by default values.
4) Get the PWM value of brightness from EEPROM.
5) Is the power key pressed?
6) Clear all global flags.
7) Are the AUTO and SELECT keys pressed?
8) Enter factory mode.
9) Save the power key status into EEPROM. Turn on the LED and set it to green color. Scalar initializes.
10) In standby mode?
11) Update the lifetime of back light.
12) Check the analog port, are there any signals coming?
13) Does the scalar send out an interrupt request?
14) Wake up the scalar.
15) Are there any signals coming from analog port?
16) Display "No connection Check Signal Cable" message. And go into standby mode after the message disappears.
17) Program the scalar to be able to show the coming mode.
18) Process the OSD display.
19) Read the keyboard. Is the power key pressed?

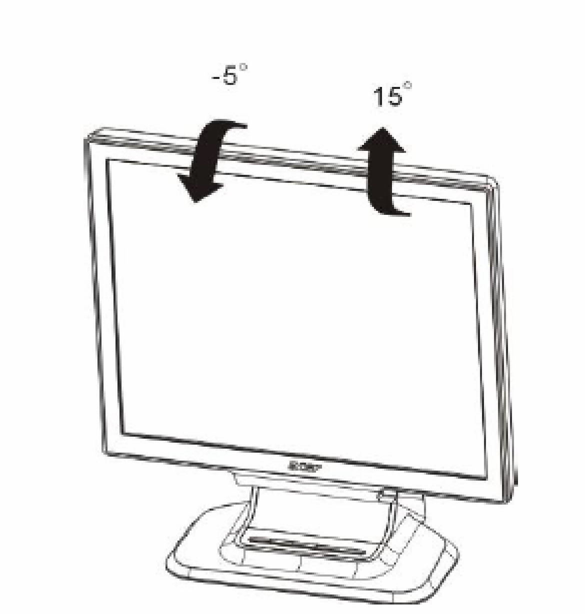
Main Board Layout



Symbol	Description	Symbol	Description
U401	IC TSUMU58WHJ-LF PQFP-128	U702	LM3485 MSOP-8 NS
X401	CRYSTAL 14.318MHzHC-49US	CN302	DV1 CONNECTOR 24 PIN
U601	IC TDA7496T 1.2W*2 DIP-20 ST	CN601	WAFER 4P RIGHT ANGLE
U403	M24C16-WMN6TP	CN702	WAFER 6P RIGHT ANGLE PITCH 2.0
U402	IC PM25LV010-25 SCE SOIC-8 PMC	CN402	WAFER 30P 2.0MM RIGHT ANGLE
U407	CAT24WC08W SOIC-8	CN602	PHONE JACK 5PIN
U601	IC TDA7496T 1.2W*2 DIP-20 ST	CN603	PHONE JACK 5PIN
U301	M24C02-WMN6TP	CN701	DC JACK 3PIN

Adjusting the viewing angle

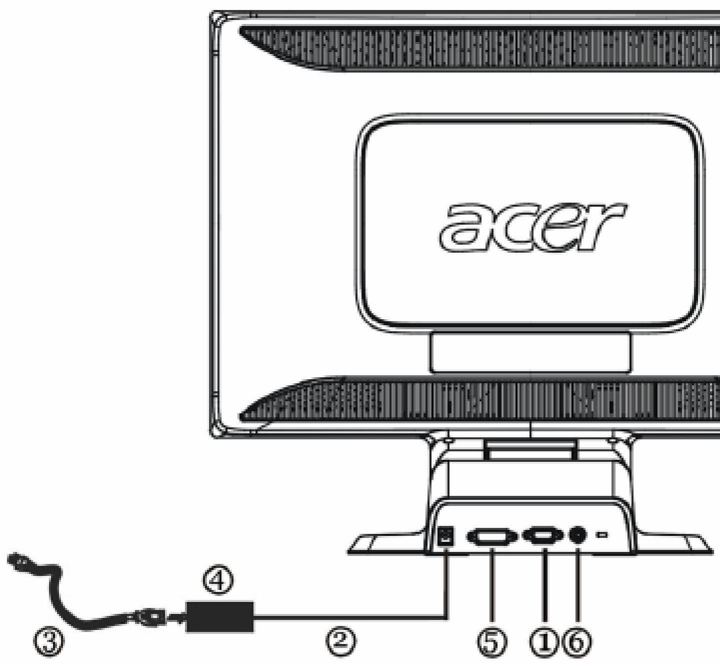
- For For optimal viewing it is recommended to look at the full face of the monitor, then adjust the monitor's angle to your own preference.
- Hold the stand so you do not topple the monitor when you change the monitor's angle.
- You can adjust the angle of the monitor from -5° to 15°, but please notice that the rear obliquity of the monitor must not be over 15° when you adjust it, otherwise the machine may be inclined.



NOTES

- Do not touch the LCD screen when you change the angle. It may cause damage or break the LCD screen.
- Careful attention is required not to catch your fingers or hands when you change the angle.

Rear Bezel



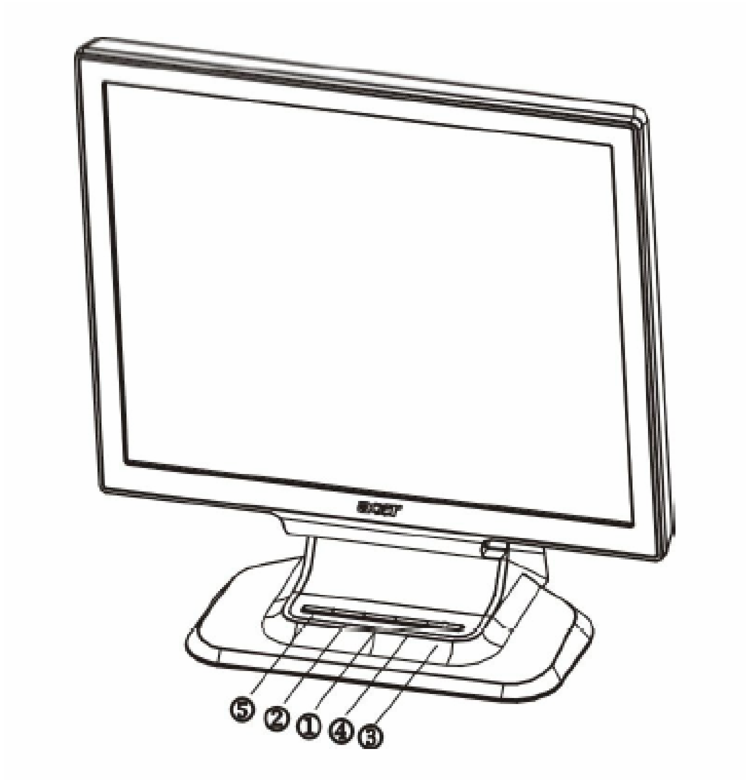
Item	Description	Item	Description
1.	D-SUB Cable	4.	External Adapter
2.	DC-Jack Power Cable	5.	DVI Cable
3.	AC Power Cord	6.	Audio Cable

Operating Instructions

Press the power button to turn the monitor on or off. The other control buttons are located at front panel of the monitor. By changing these settings, the picture can be adjusted to your personal preferences.

- The power cord should be connected.
- Connect the video cable from the monitor to the video card.
- Press the power button to turn on the monitor position. The power indicator will light up.

External Controls



Item	Description	Item	Description
1.	>/ Volume	4.	MENU/ENTER
2.	</ Volume	5.	Auto Adjust Key/Exit
3.	Power Key/Power Indicator		

Front Panel Control

- **Power Button:**
  Press this button to turn the monitor ON or OFF. And display the monitor's state.

- **Menu / Enter:**
  Activate OSD menu when OSD is OFF or activate/de-activate adjustment function when OSD is ON or Exit OSD menu when in Volume Adjust OSD status.

- <**Volume:**
  Activates the volume control when the OSD is OFF or navigates through adjustment icons when OSD is ON or adjust a function when function is activated.

- >**/Volume:**
  Activates the volume control when the OSD is OFF or navigates through adjustment icons when OSD is ON or adjusts a function when function is activated.

- **Auto Adjust button / Exit:**
  1. When OSD menu is in active status, this button will act as EXIT-KEY (EXIT OSD menu).
  2. When OSD menu is in off status, press this button for 2 seconds to activate the Auto Adjustment function.
     The Auto Adjustment function is used to set the HPos, VPos, Clock and Focus.

- **Power Indicator:**
  Blue — Power On mode.
  Orange — Off mode

NOTES

Notes

- Do not install the monitor in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, or excessive dust or mechanical vibration or shock.
- Save the original shipping carton and packing materials, as they will come in handy if you ever have to ship your monitor.
- For maximum protection, repackage your monitor as it was originally packed at the factory.
- To keep the monitor looking new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner, benzene, or abrasive cleaners, since these will damage the cabinet. As a safety precaution, always unplug the monitor before cleaning it.

Adjusting the Picture

How to Adjust a Setting

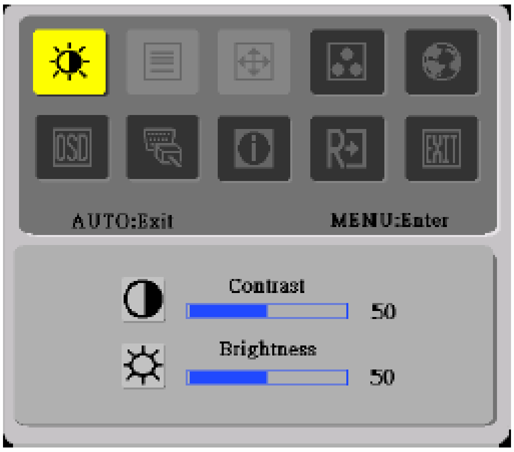
1. Press the MENU-button to activate the OSD window.
2. Press <or >to select the desired function.
3. Press the MENU-button to select the function that you want to adjust.
4. Press < or >to change the settings of the current function.
5. To exit and save, select the exit function. If you want to adjust any other function, repeat steps 2-4.



Only Analog Input model



Dual-input model，Analog Input



Dual-input model，Digital Input

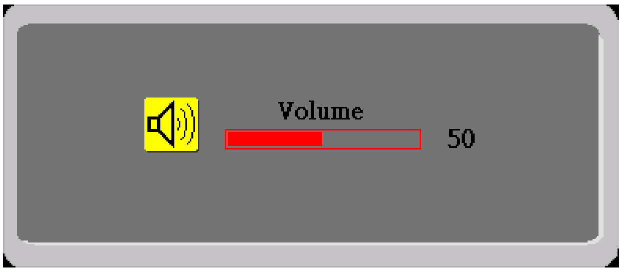
b. The Description For Control Function

Main Menu Icon	Sub Menu Icon	Sub Menu Item	Description
		Contrast	Adjusts the contrast between the foreground and background of the screen image.
		Brightness	Adjusts the background brightness of the screen image.
		Focus	Adjusts picture Focus (available in Analog mode only).
		Clock	Adjusts picture Clock (available in Analog mode only).
		H. Position	Adjust picture Focus (available in Analog mode only).
		V. Position	Adjust picture Clock (available in Analog mode only).
	N/A	Warm	Set the color temperature to warm white.
	N/A	Cool	Set the color temperature to cool white.
	R	User /Red	Adjusts Red/Green/Blue intensity.
	G	User/Green	
	B	User/Blue	

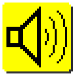
	N/A	English	Multi-language selection.
	N/A	繁體中文	
	N/A	Deutsch	
	N/A	Français	
	N/A	Español	
	N/A	Italiano	
	N/A	简体中文	
	N/A	日本語	
		H. Position	Adjust the horizontal position of the OSD.
		V. Position	Adjust the vertical position of the OSD.
		OSD Timeout	Adjust the OSD timeout.
(only Analog-input Model)	N/A	Auto Config	Auto Adjust the H/V Position, Focus and Clock of picture.
(only Dual-Input Model)	N/A	Analog	Select input signal from analog (D-Sub)
	N/A	Digital	Select input signal from digital (DVI)
	N/A	Information	Show the resolution, H/V frequency and input port of current iput timing.
	N/A	Reset	Clear each old status of Auto-configuration and set the color temperature to Cool.
	N/A	Exit	Save user adjustment and OSD disappear.

Hot-Key Menu

a. Outline



b. The Description For Hot-Key Function

Item	Operation	Icon	Description
Volume	When the OSD is closed, press Left or Right button will be Volume Hot-Key Function		Volume of Audio adjustment. The Audio will be Mute when volume=0

OSD Message

a. Outline



b. The Description For OSD Message

Item	Description
Auto Config Please Wait	When Analog signal input, if User Press Hot-Key “Auto”, will show this message, and the monitor do the auto config function.
Input Not Supported	When the Hsync Frequency, Vsync Frequency or Resolution is out of the monitor support range, will show this message. This message will be flying.
Cable Not Connected	Analog-Only Model: When the video cable is not connected, will show this message. This message will be flying.
No Signal	Analog-Only Model: When the video cable is connected, but there is no active signal input, will show this message, then enter power saving.

Logo

When the monitor is power on, the LOGO will be showed in the center, and disappear slowly.

How To Optimize The DOS-Mode

Plug And Play

Plug & Play DDC2B Feature

This monitor is equipped with VESA DDC2B capabilities according to the VESA DDC STANDARD. It allows the monitor to inform the host system of its identity and, depending on the level of DDC used, communicate additional information about its display capabilities.

The DDC2B is a bi-directional data channel based on the I^2C protocol. The host can request EDID information over the DDC2B channel.

This monitor will appear to be non-functional if there is no video input signal. In order for this monitor to operate properly, there must be a video input signal.

This monitor meets the Green monitor standards as set by the Video Electronics Standards Association (VESA) and/or the United States Environmental Protection Agency (EPA) and The Swedish Confederation Employees (NUTEK). This feature is designed to conserve electrical energy by reducing power consumption when there is no video-input signal present. When there is no video input signals this monitor, following a time-out period, will automatically switch to an OFF mode. This reduces the monitor's internal power supply consumption. After the video input signal is restored, full power is restored and the display is automatically redrawn. The appearance is similar to a "Screen Saver" feature except the display is completely off. Pressing a key on the keyboard, or clicking the mouse restores the display.

Using The Right Power Cord

The accessory power cord for the Northern American region is the wallet plug with NEMA 5-15 style and is UL listed and CSA labeled. The voltage rating for the power cord shall be 125 volts AC.

Supplied with units intended for connection to power outlet of personal computer: Please use a cord set consisting of a minimum No. 18 AWG, type SJT or SVT three conductors flexible cord. One end terminates with a grounding type attachment plug, rated 10A, 250V, and CEE-22 male configuration. The other end terminates with a molded-on type connector body, rated 10A, 250V, having standard CEE-22 female configuration.

Please note that power supply cord needs to use VDE 0602, 0625, 0821 approval power cord in European counties.

Machine Disassembly

This chapter contains step-by-step procedures on how to assemble the monitor for maintenance.

Disassembly Procedure

1. Remove two screws to release back cover. (Fig 1)
2. Remove connector wire with base and panel, base and inverter. (Fig 2)



Fig 1

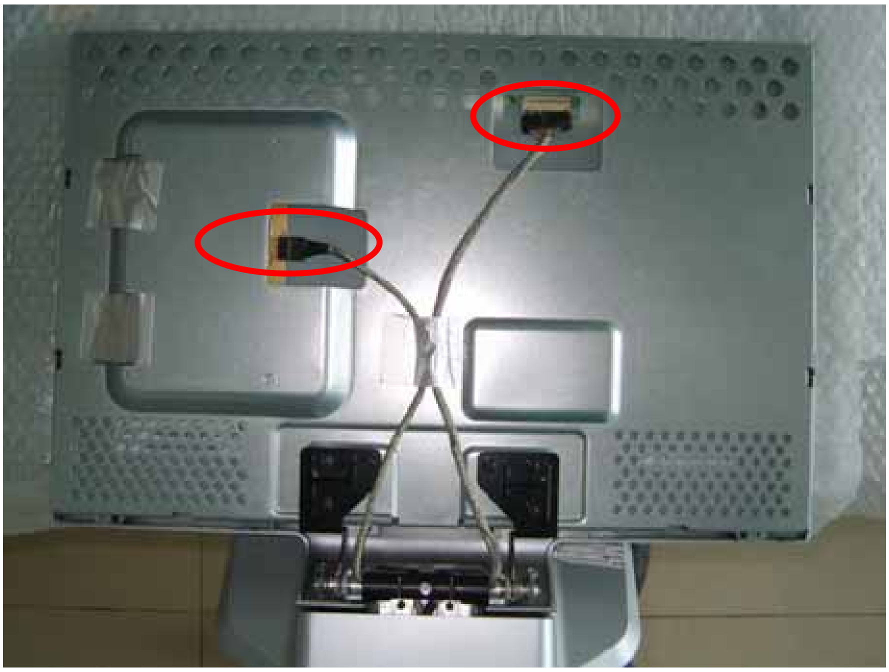


Fig 2

3. Remove the base stand. (Fig 3)

4.Remove the screws to release front bezel. (Fig 4)

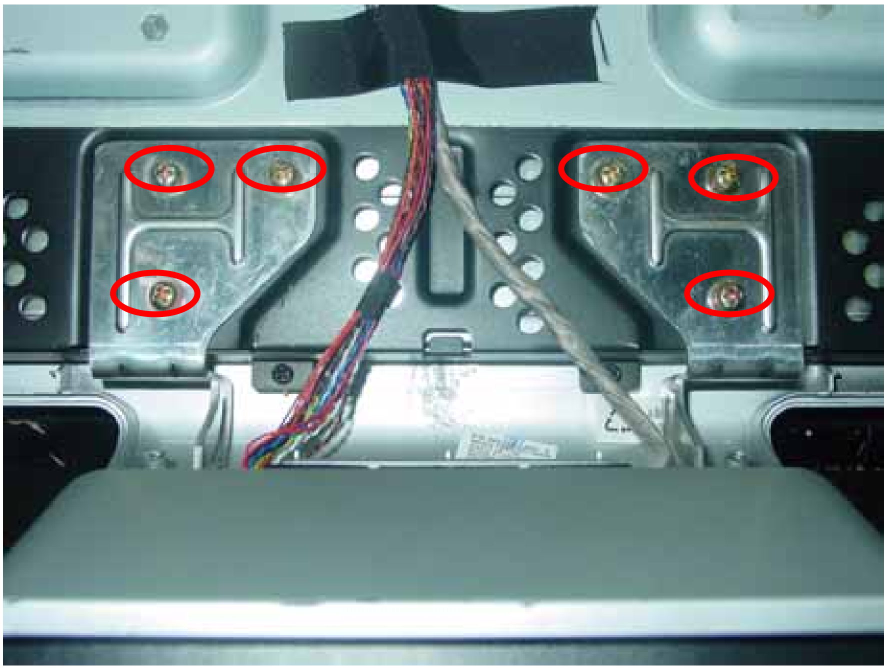


Fig 3



Fig 4

5. Remove the hinge cap. (Fig 5)

6. Remove eleven screws to release top cover and bottom cover. (Fig 6)



Fig 5

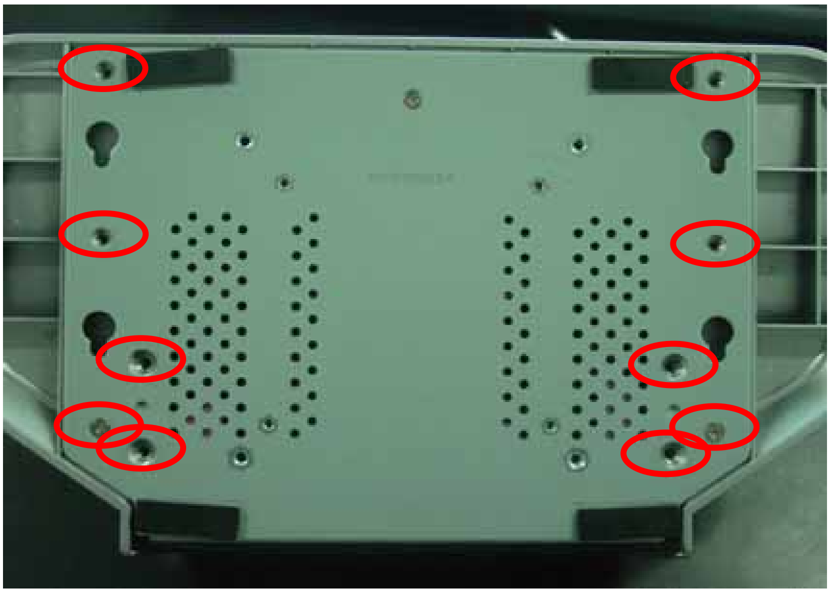


Fig 6

7. Remove the main board. (Fig 7)

8. Remove six clamps to release shield and the main board. (Fig 8)

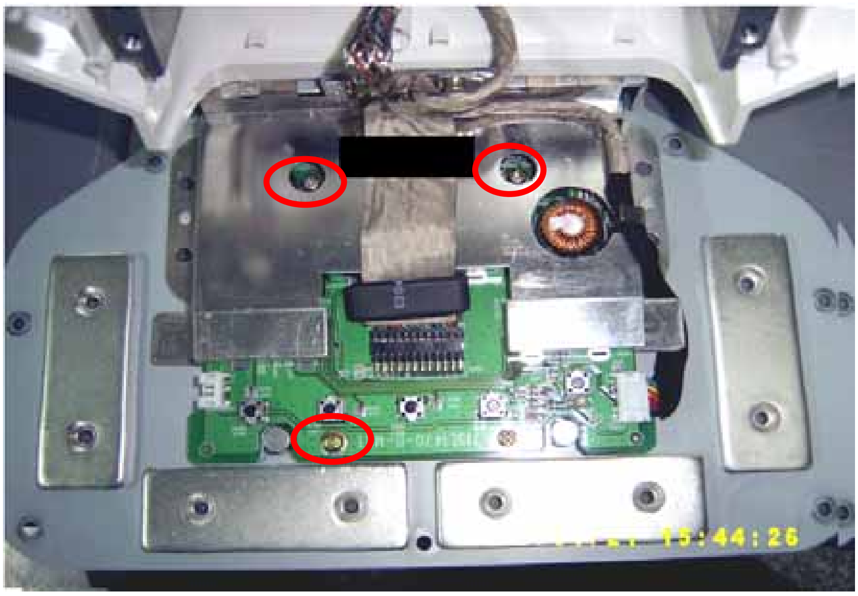


Fig 7

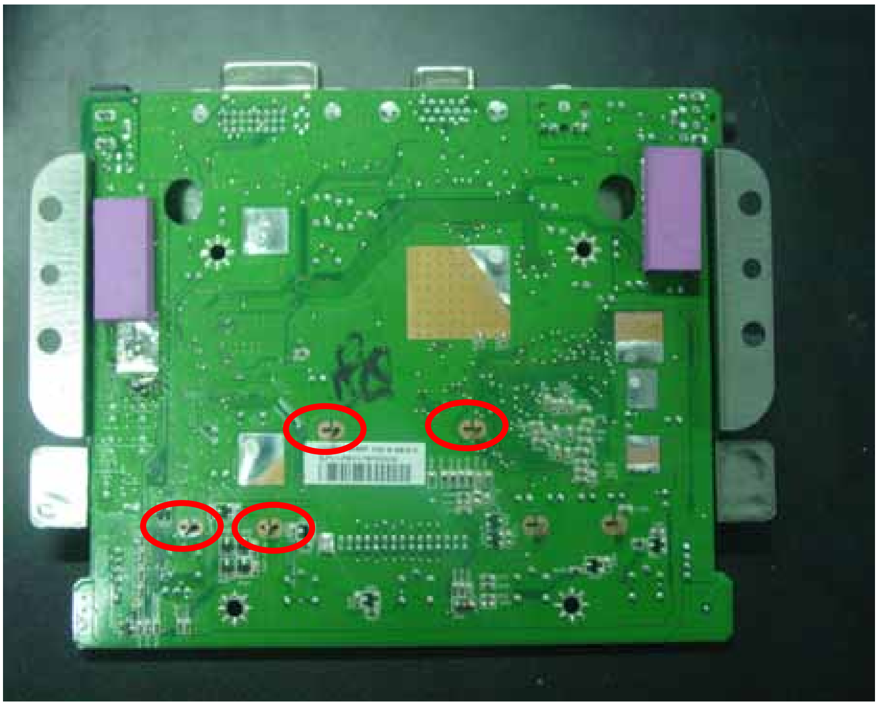


Fig 8

9. Removefour screws connect with panel to remove the main frame. (Fig 9-10)

10.Remove the screws to remove the inverter board. (Fig 11)

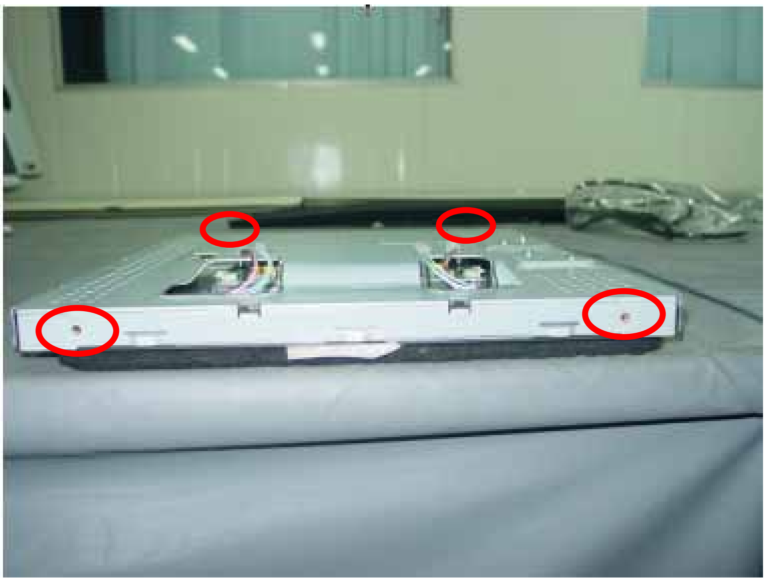


Fig 9



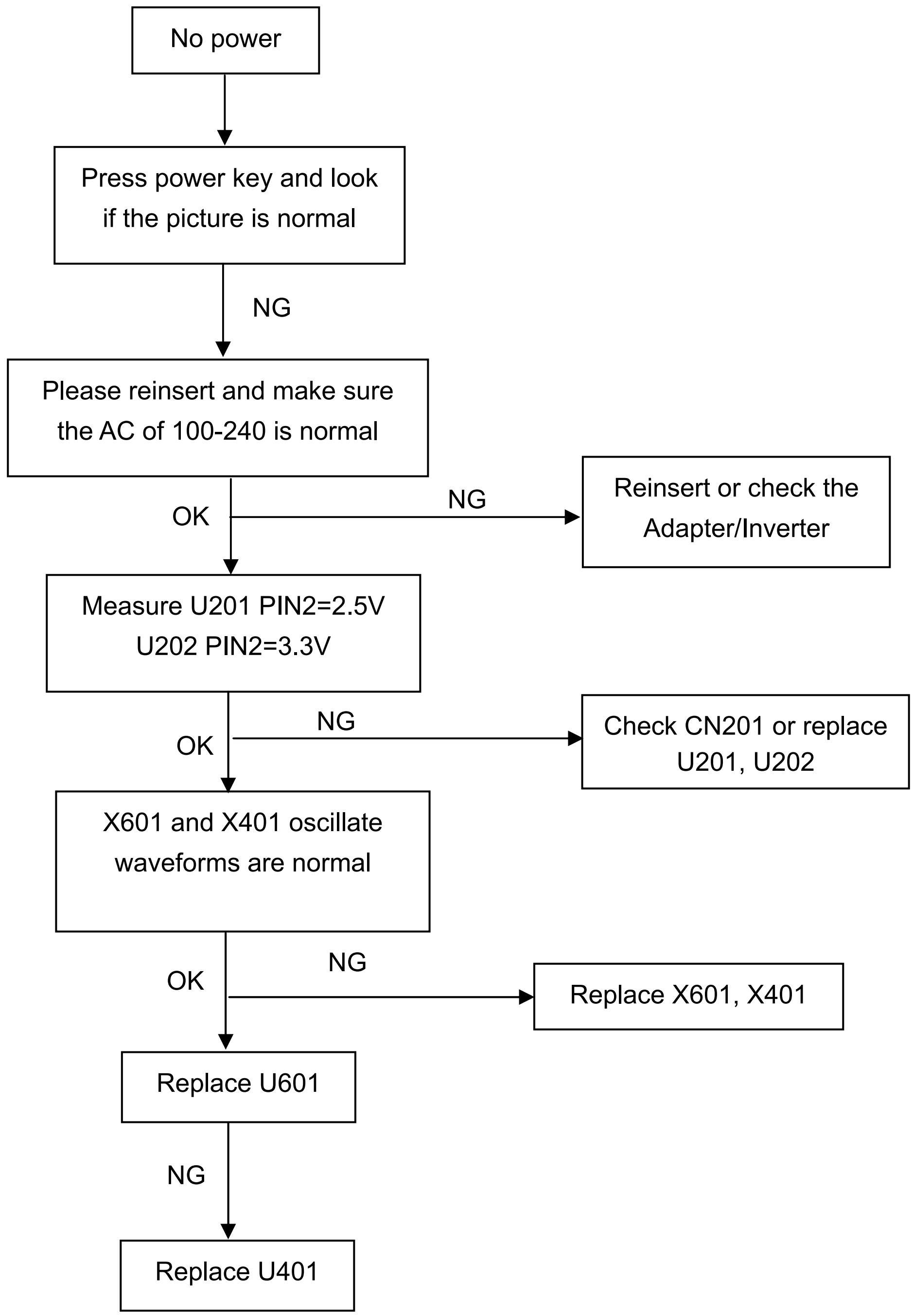
Fig 10



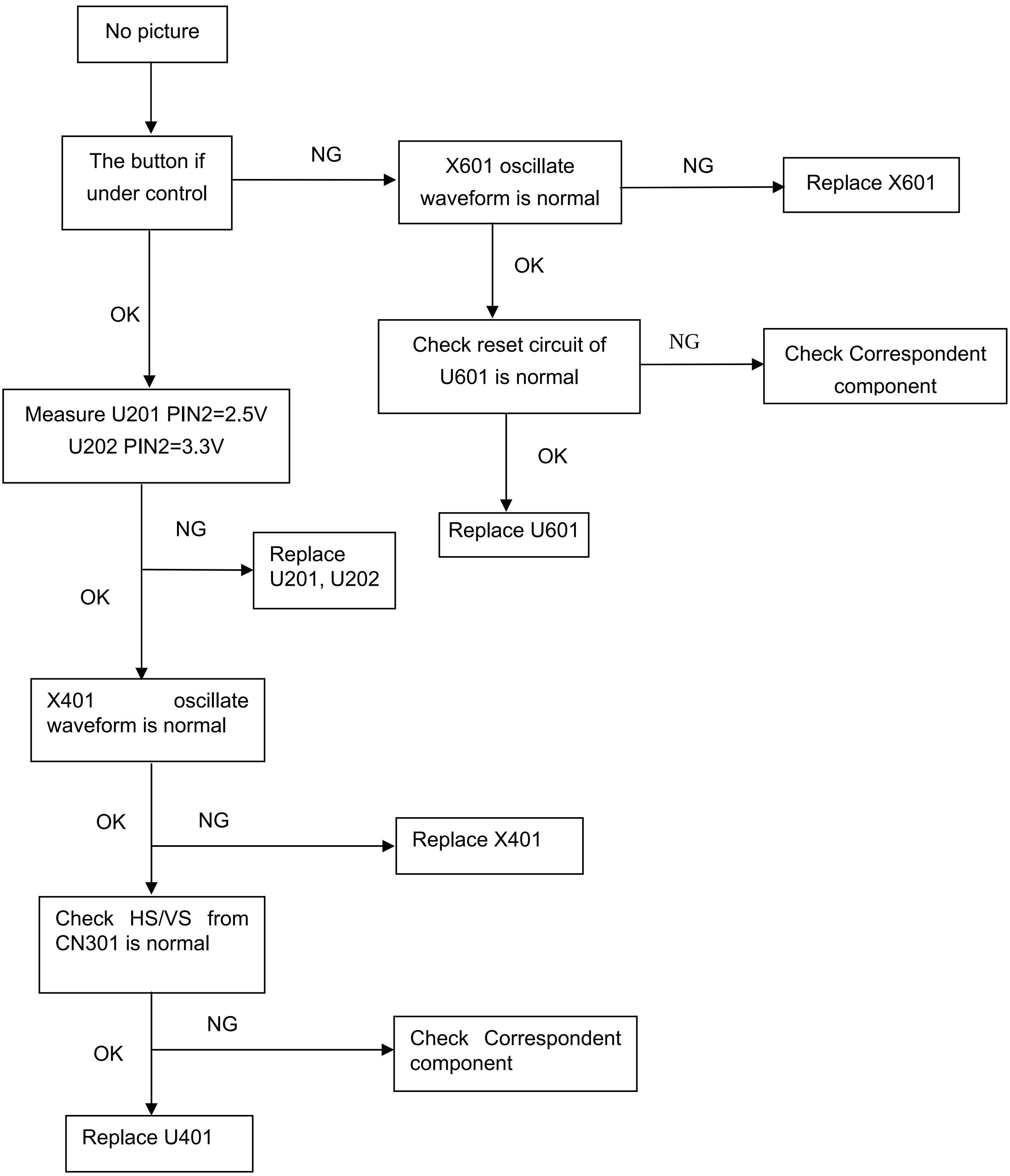
Fig 11

This chapter provides troubleshooting information for the AL2251W:

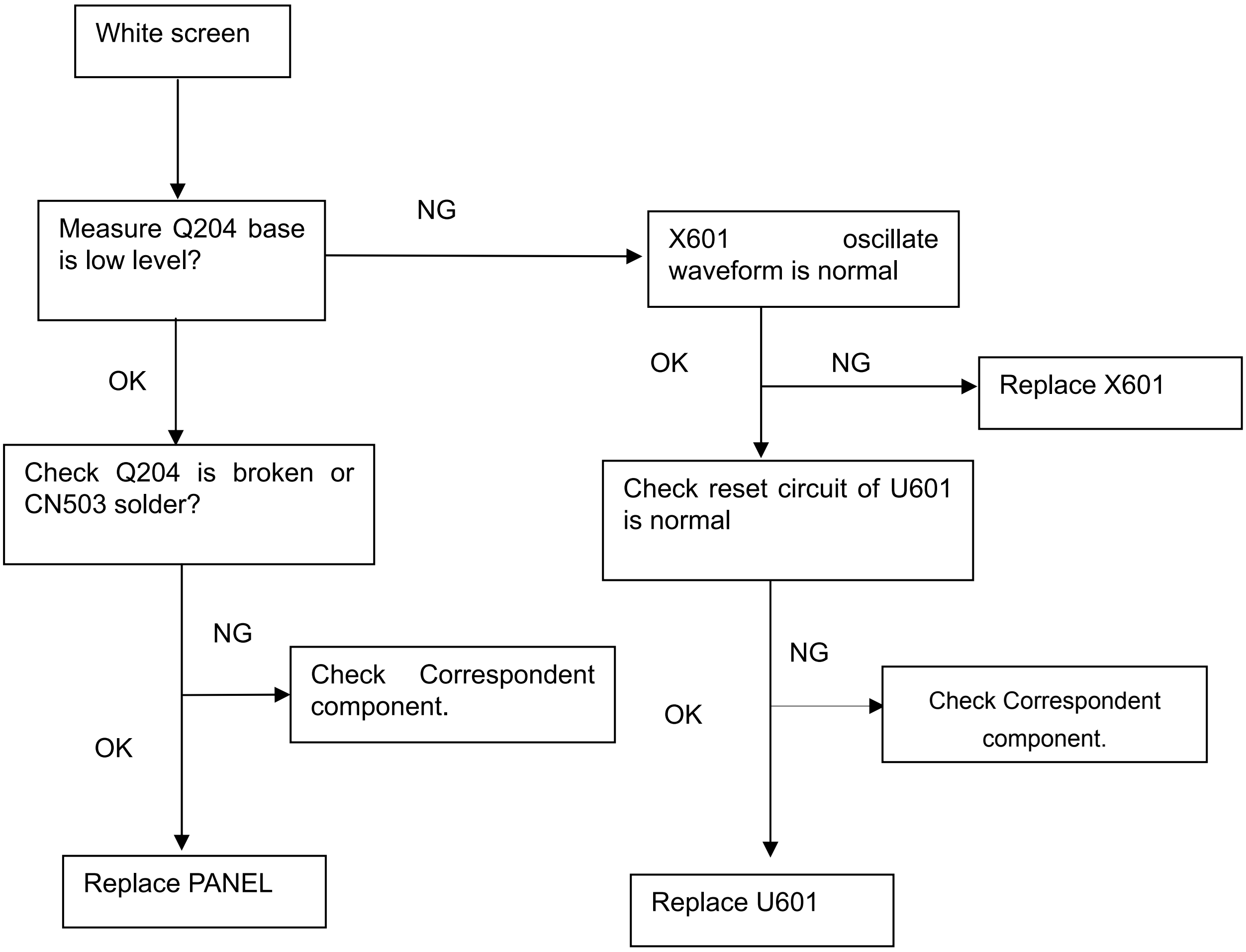
1. No Power



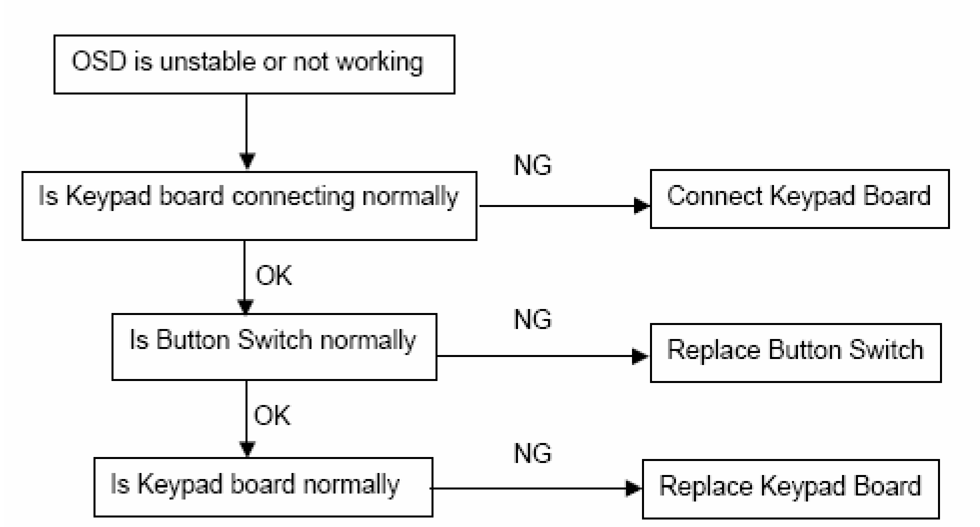
2. No Picture


No picture
The button if under control
NG
X601 oscillate waveform is normal
NG
Replace X601
OK
OK
Check reset circuit of U601 is normal
NG
Check Correspondent component
Measure U201 PIN2=2.5V U202 PIN2=3.3V
OK
Replace U601
NG
Replace U201, U202
OK
X401 oscillate waveform is normal
OK
NG
Replace X401
Check HS/VS from CN301 is normal
NG
Check Correspondent component
OK
Replace U401

3. White Screen

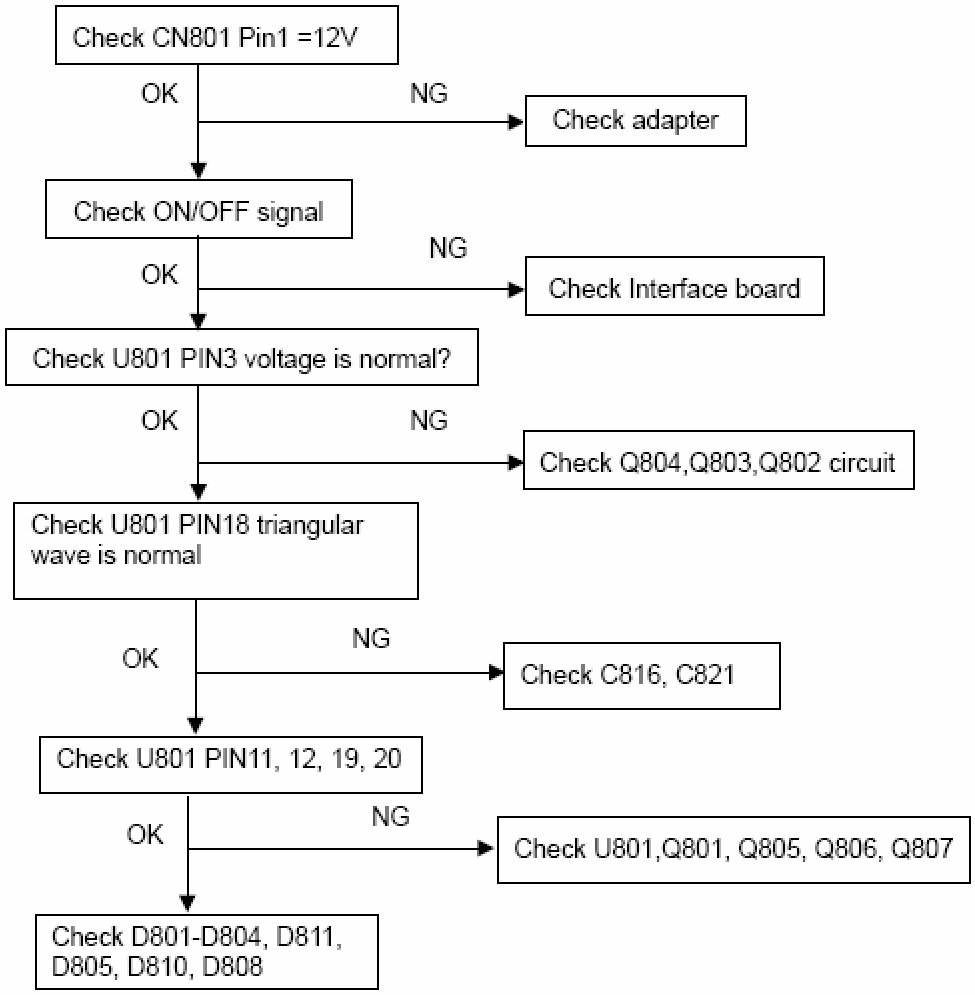


4. Keypad Board

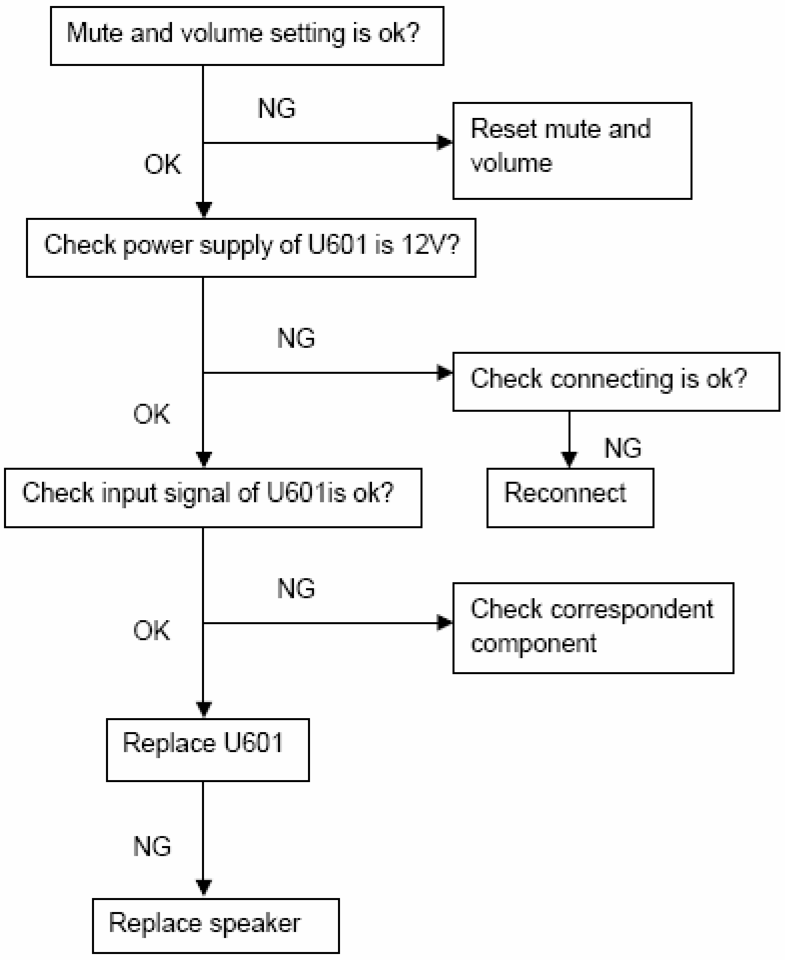


5. Inverter Board

No Backlight

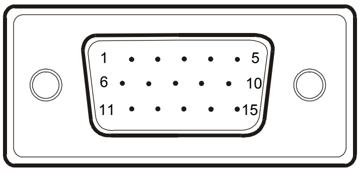


6. No Audio


Mute and volume setting is ok?
NG
Reset mute and volume
OK
Check power supply of U601 is 12V?
NG
Check connecting is ok?
OK
NG
Check input signal of U601is ok?
Reconnect
NG
Check correspondent component
OK
Replace U601
NG
Replace speaker

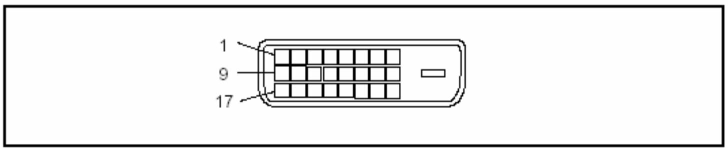
Connector Information

The following figure shows the connector locations on the monitor:



15 – Pin Color Display Signal Cable (D-sub)

Pin No.	Description	Pin No.	Description
1.	Red	9.	+5V
2.	Green	10.	Logic Ground
3.	Blue	11.	Monitor Ground
4.	Monitor Ground	12.	DDC-Serial Data
5.	DDC-Return	13.	H-Sync
6.	R-Ground	14.	V-Sync
7.	G-Ground	15.	DDC-Serial Clock
8.	B-Ground		



24 – Pin Color Display Signal Cable (DVI)

Pin No.	Description	Pin No.	Description
1.	TMDS Data2-	13.	TMDS Data3+
2.	TMDS Data2+	14.	+5V Power
3.	TMDS Data 2/4 Shield	15.	GND
4.	TMDS Data4-	16.	Hot Plug Detect
5.	TMDS Data4+	17.	TMDS Data0-
6.	DDC Clock	18.	TMDS Data0+
7.	DDC Data	19.	TMDS Data 0/5 Shield
8.	Analogue Vertical Sync	20.	TMDS Data5-
9.	TMDS Data1-	21.	TMDS Data5+
10.	TMDS Data1+	22.	DDC Clock Shield
11.	TMDS Data 1/3 Shield	23.	DDC Clock+
12.	TMDS Data3-	24.	DDC Clock-

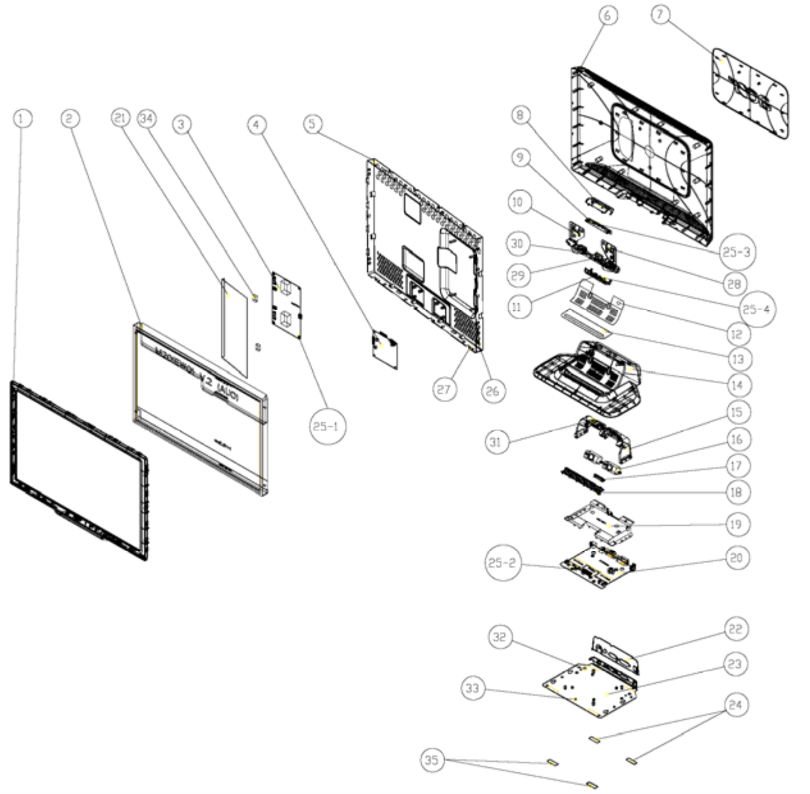
FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of AL2251W.Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE: Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel (http://aicsl.acer.com.tw/spl/). For whatever reasons a part number change is made, it will not be noted in the printed Service Guide. For ACER AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code from those given in the FRU list of this printed Service Guide. You MUST use the local FRU list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

NOTE: To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by your regional Acer office on how to return it.

Exploded Diagram (Model: AL2251W)

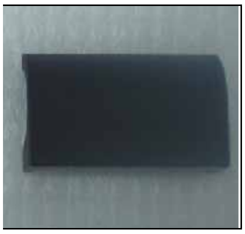


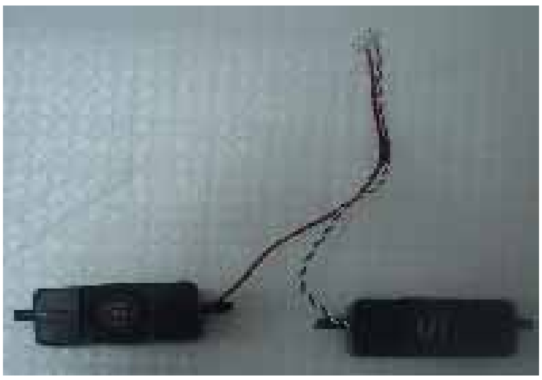
Item.	Part Name	Part No.	Q'ty	Remark
01	Bezel	A34G0144-QW-A1B	1	
02	Panel	CMO M220Z1-L01	1	
03	Invertor Board		1	
04	OD Board		1	
05	Mainframe	A15G0105-1	1	
06	Rear Cover	A34G0145-QT-B	1	
07	Back Cover	34G1784 QU B	1	
08	Hinge Cover_B	33G4968 QT L	1	
09	Hinge Cap	33G4966 QT L	1	
10	Hinge Ass'y	Q37G0025-1	1	
11	Hinge Cover_F	33G4967 QW L	1	
12	SPK NET	36G802-2	1	
13	Key Decoration	33G4970-1	1	
14	Base	34G1785 QW B	1	
15	Hinge Holder	20G041-1	1	
16	Speaker		2	
17	Button Power Cap	033G4963AQV X	1	
18	Button	033G4962AQX L	1	
19	Shielding	85G732-1	1	
20	Scalar Board		1	
21	Mylar	52G6025-11-984	1	
22	Base Back Cover	33G4965AQT 1L	1	
23	Bkt Base	15G8292-1	1	
24	Foot Poron	Q12G6600-11	2	
25	M3*6	M1G1730-6-128-CR3	11	Board&**
26	M3*6	M1G130-6-120	4	Mainframe&Panel
27	Tap3*8	Q1G330-8-47-CR3	8	[illegible]
28	M4*8	M1G1740-8-47-CR3	6	Mainframe&Hinge
29	Tap3*6	Q1G130-6-120	2	Hinge Cover_F& Hinge
30	M4*10	M1G1740-10-128-CR3	3	Hinge&Hinge holder
31	M3*6	M1G1030-6-128-CR3	4	Speaker&Hinge holder
32	M4*8	M1G140-8-120	4	Bkt Base&Base
33	Tap3*6	Q1G130-6-120	7	Bkt Base&Base
34	EVA WSHER	44G3231-15-571	2	
35	Foot Poron	12G6211-1	2	

ACER AL2251W EXPLODE

Part List

Above picture show the description of the following component.

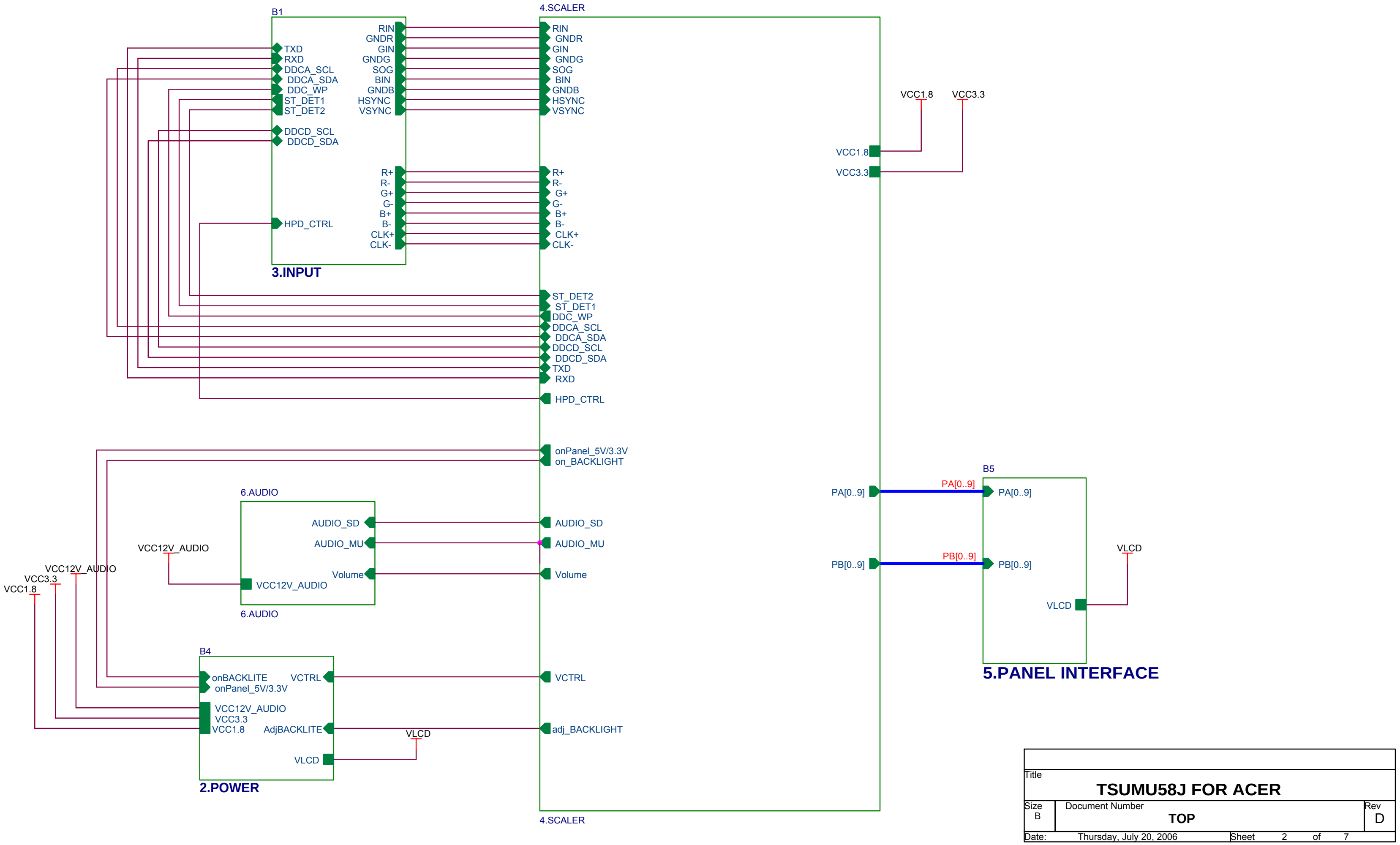
Item	Picture	Description
1		Hinge Cover
2		Bezel
3		Back Cover
4		Shield
5		Main Frame

6		Panel
7		Power Board
8		Main Board
9		Speakers

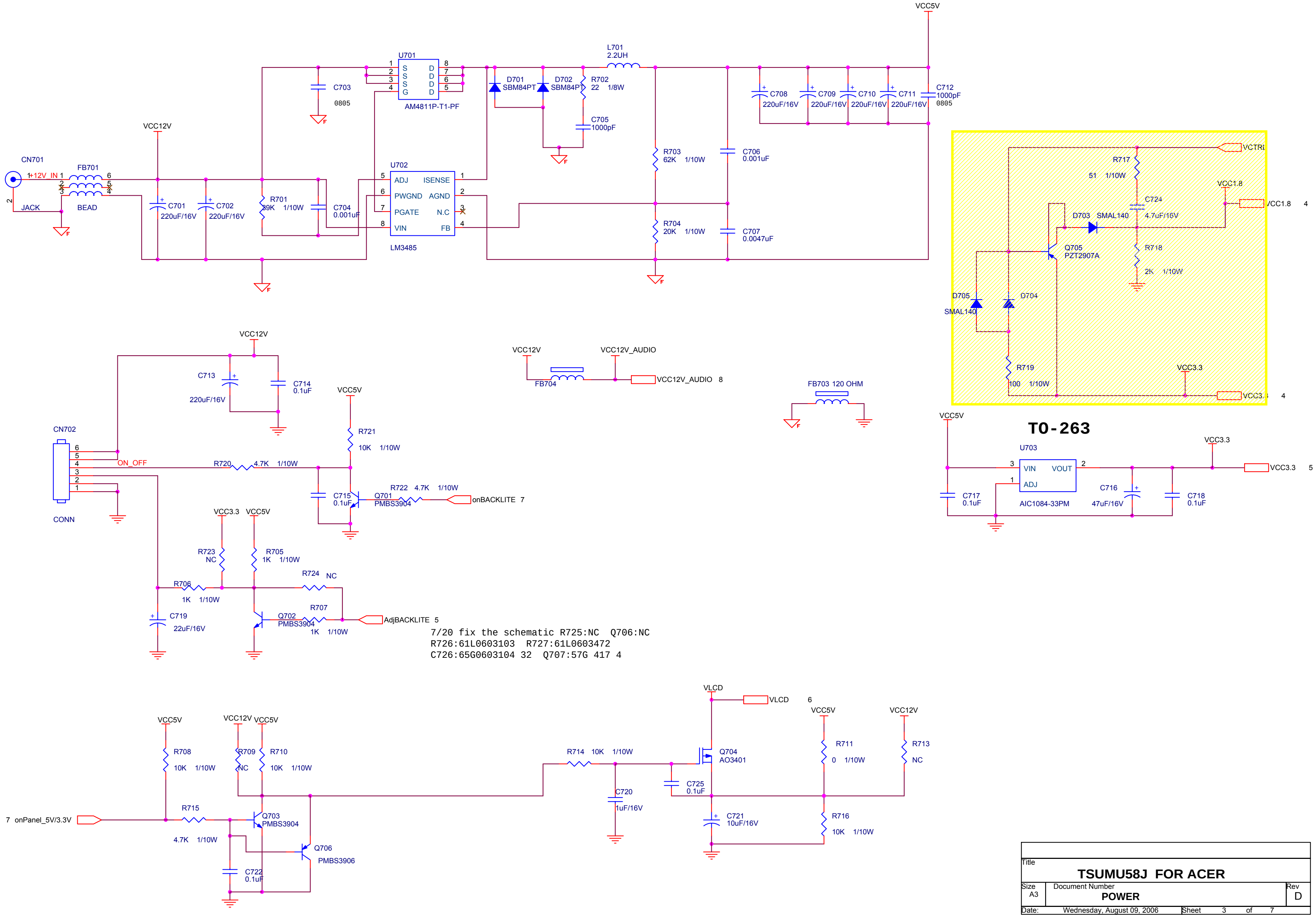
Main Board

Top

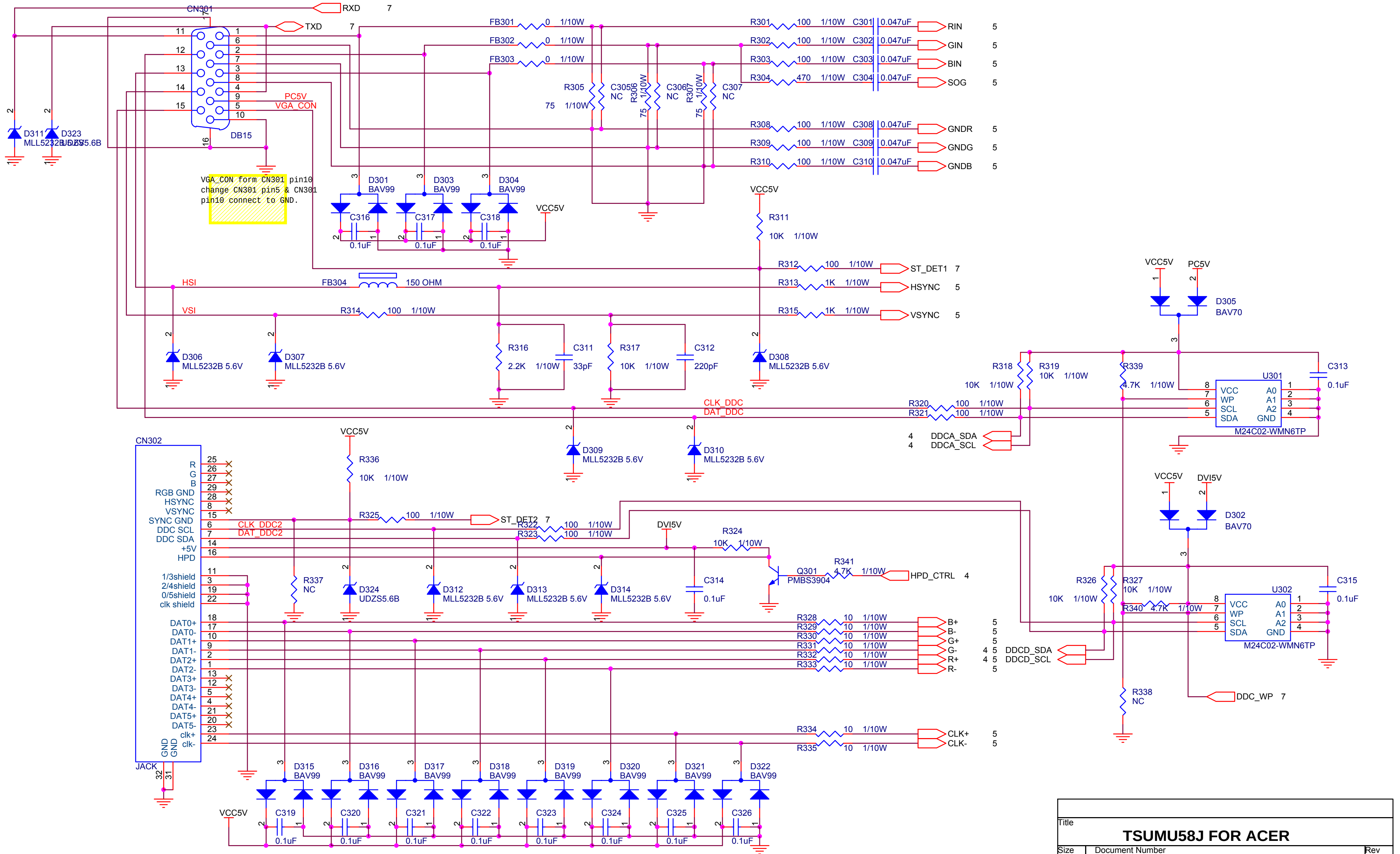
TSUMU58J-SCHEMATIC



Power

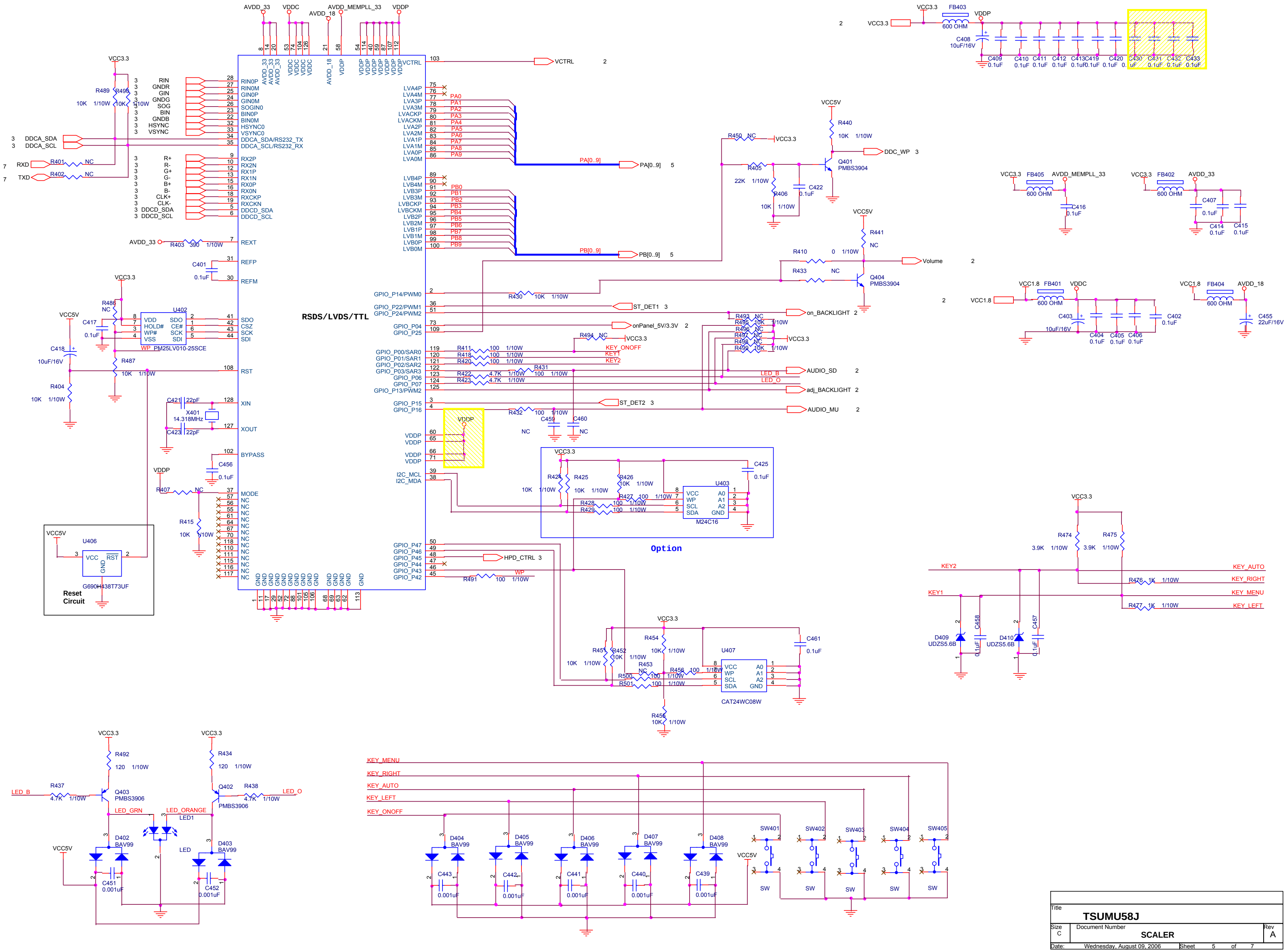

VCC5V
U701
AM4811P-T1-PF
C703
0805
D701
SBM84PT
D702
SBM84PT
R702
22 1/8W
L701
2.2UH
C705
1000pF
C708
220uF/16V
C709
220uF/16V
C710
220uF/16V
C711
220uF/16V
C712
1000pF
0805
VCC12V
CN701
JACK
FB701
BEAD
+12V_IN
C701
220uF/16V
C702
220uF/16V
R701
39K 1/10W
C704
0.001uF
U702
ADJ
ISENSE
PWGND
AGND
PGATE
N.C
VIN
FB
LM3485
R703
62K 1/10W
R704
20K 1/10W
C706
0.001uF
C707
0.0047uF
VCTRL
R717
51 1/10W
VCC1.8
C724
4.7uF/16V
D703 SMAL140
Q705
PZT2907A
R718
2K 1/10W
D705
SMAL140
D704
R719
100 1/10W
VCC3.3
TO-263
U703
VIN
VOUT
ADJ
AIC1084-33PM
C717
0.1uF
C716
47uF/16V
C718
0.1uF
VCC12V_AUDIO
FB704
FB703 120 OHM
CN702
CONN
ON_OFF
C713
220uF/16V
C714
0.1uF
R721
10K 1/10W
R720
4.7K 1/10W
C715
0.1uF
Q701
PMBS3904
R722 4.7K 1/10W
onBACKLITE 7
VCC3.3 VCC5V
R723
NC
R705
1K 1/10W
R724 NC
R706
1K 1/10W
R707
1K 1/10W
Q702
PMBS3904
AdjBACKLITE 5
C719
22uF/16V
7/20 fix the schematic R725:NC Q706:NC
R726:61L0603103 R727:61L0603472
C726:65G0603104 32 Q707:57G 417 4
VLCD
VLCD 6
Q704
AO3401
R714 10K 1/10W
C720
1uF/16V
C725
0.1uF
C721
10uF/16V
R711
0 1/10W
R713
NC
R716
10K 1/10W
R708
10K 1/10W
R709
NC
R710
10K 1/10W
7 onPanel_5V/3.3V
R715
4.7K 1/10W
Q703
PMBS3904
Q706
PMBS3906
C722
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TSUMU58J FOR ACER
Size A3
Document Number
POWER
Rev D
Date: Wednesday, August 09, 2006
Sheet 3 of 7

Input

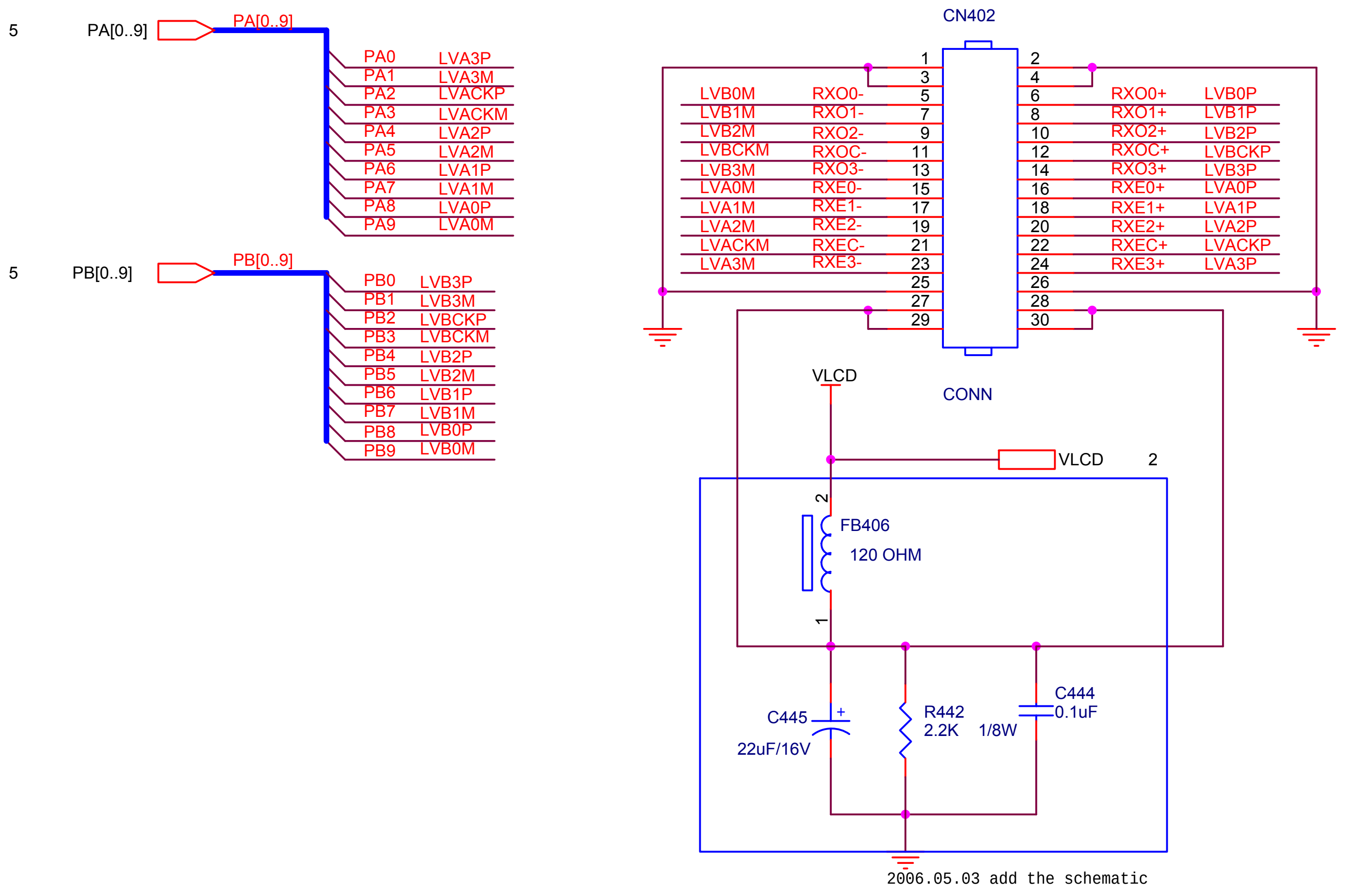


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Scaler

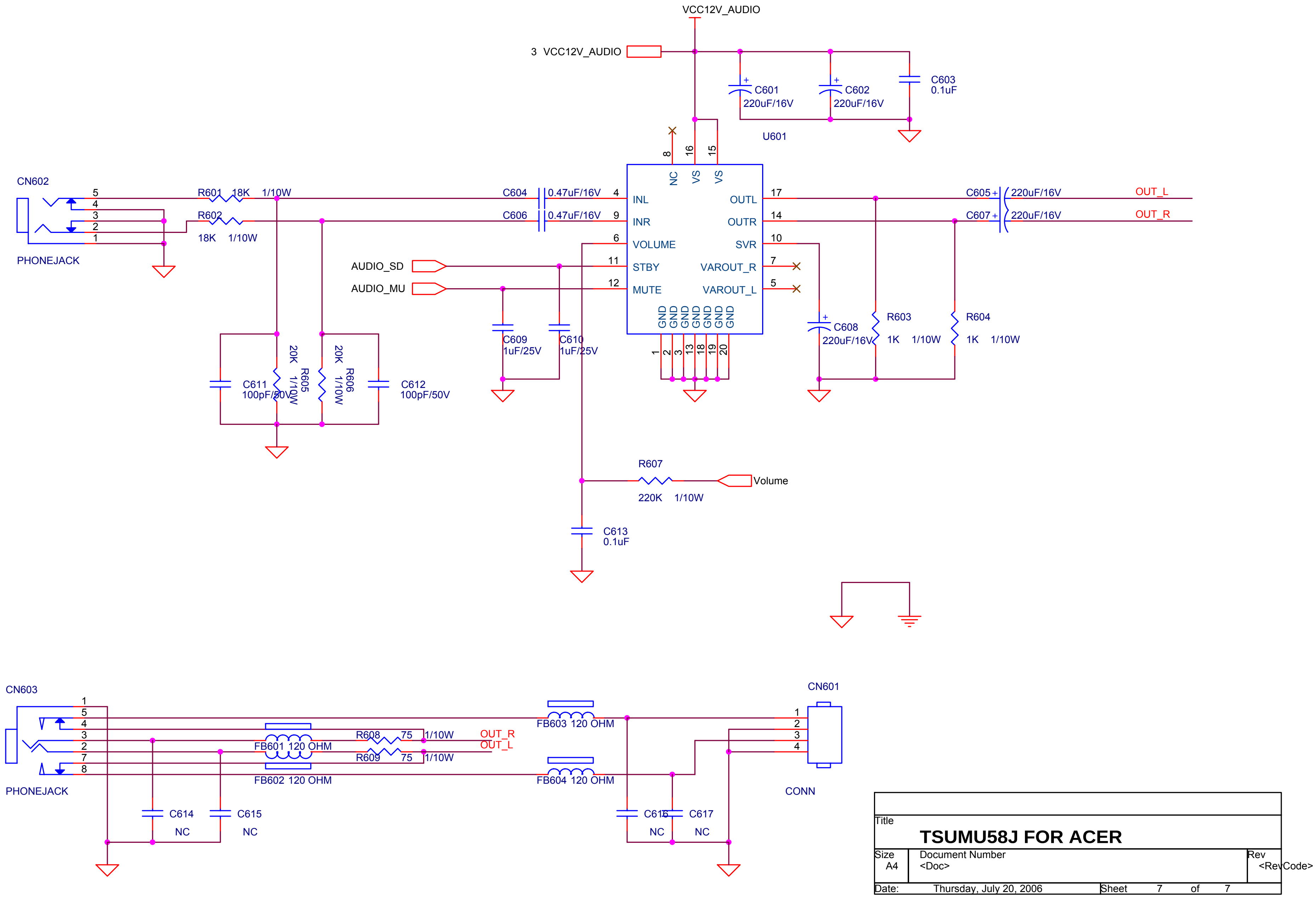

RSDS/LVDS/TTL
Option
Reset Circuit
U402 PM25LV010-25SCE
U403 M24C16
U406 G690H438T73UF
U407 CAT24WC08W
X401 14.318MHz
Q401 PMBS3904
Q404 PMBS3904
Q403 PMBS3906
Q402 PMBS3906
LED1
SW401
SW402
SW403
SW404
SW405
Title
TSUMU58J
Size C
Document Number
SCALER
Rev A
Date: Wednesday, August 09, 2006
Sheet 5 of 7

Panel Interface



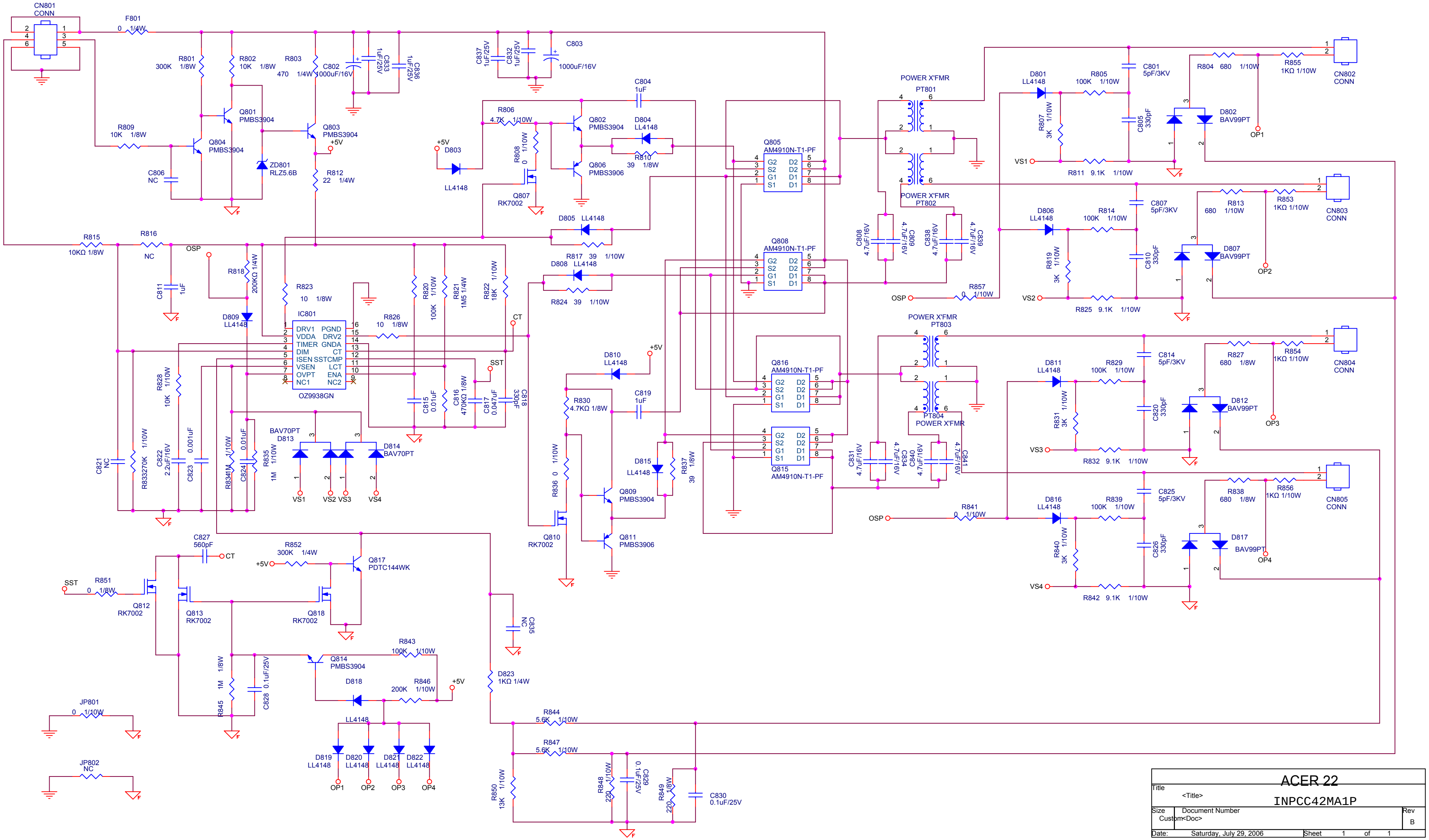
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Size A	Document Number PANEL INTERFACE	Rev D
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Audio



VCC12V_AUDIO
3 VCC12V_AUDIO
C601 220uF/16V
C602 220uF/16V
C603 0.1uF
U601
NC VS VS
INL
INR
VOLUME
STBY
MUTE
OUTL
OUTR
SVR
VARROUT_R
VARROUT_L
GND GND GND GND GND GND GND
CN602
PHONEJACK
R601 18K 1/10W
R602 18K 1/10W
C604 0.47uF/16V
C606 0.47uF/16V
AUDIO_SD
AUDIO_MU
C609 1uF/25V
C610 1uF/25V
C611 100pF/50V
R605 20K 1/10W
R606 20K 1/10W
C612 100pF/50V
C605 220uF/16V
C607 220uF/16V
OUT_L
OUT_R
C608 220uF/16V
R603 1K 1/10W
R604 1K 1/10W
R607 220K 1/10W
Volume
C613 0.1uF
CN603
PHONEJACK
FB601 120 OHM
FB602 120 OHM
R608 75 1/10W
R609 75 1/10W
OUT_R
OUT_L
FB603 120 OHM
FB604 120 OHM
C614 NC
C615 NC
C616 NC
C617 NC
CN601
CONN
Title
TSUMU58J FOR ACER
Size A4
Document Number <Doc>
Rev <RevCode>
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Power board


CN801 CONN
F801 0 1/4W
R801 300K 1/8W
R802 10K 1/8W
R803 470 1/4W
C802 1000uF/16V
C833 1uF/25V
C836 1uF/25V
C837 1uF/25V
C832 1uF/25V
C803 1000uF/16V
Q801 PMBS3904
Q803 PMBS3904
Q804 PMBS3904
R809 10K 1/8W
C806 NC
ZD801 RLZ5.6B
R812 22 1/4W
R806 4.7K 1/10W
Q802 PMBS3904
R808 0 1/10W
Q806 PMBS3906
Q807 RK7002
D803 LL4148
C804 1uF
D804 LL4148
R810 39 1/8W
Q805 AM4910N-T1-PF
Q808 AM4910N-T1-PF
D805 LL4148
R817 39 1/10W
D808 LL4148
R824 39 1/10W
R815 10KΩ 1/8W
R816 NC
OSP
C811 1uF
R818 200KΩ 1/4W
D809 LL4148
R823 10 1/8W
IC801
OZ9938GN
DRV1 PGND
VDDA DRV2
TIMER GNDA
DIM CT
ISEN SSTCMP
VSEN LCT
OVPT ENA
NC1 NC2
R826 10 1/8W
R820 100K 1/10W
R821 1M5 1/4W
R822 18K 1/10W
CT
SST
C815 0.01uF
C816 470KΩ 1/8W
C817 0.047uF
C818 330pF
R828 10K 1/10W
C821 NC
R833 270K 1/10W
C822 2.2uF/16V
C823 0.001uF
R834 1M 1/10W
C824 0.01uF
R835 1M 1/10W
BAV70PT D813
D814 BAV70PT
VS1 VS2 VS3 VS4
POWER X'FMR PT801
POWER X'FMR PT802
POWER X'FMR PT803
PT804 POWER X'FMR
D801 LL4148
R805 100K 1/10W
C801 5pF/3KV
R804 680 1/10W
R855 1KΩ 1/10W
CN802 CONN
R807 3K 1/10W
C805 330pF
D802 BAV99PT
OP1
R811 9.1K 1/10W
C808 4.7uF/16V
C809 4.7uF/16V
C838 4.7uF/16V
C839 4.7uF/16V
D806 LL4148
R814 100K 1/10W
C807 5pF/3KV
R813 680 1/10W
R853 1KΩ 1/10W
CN803 CONN
R819 3K 1/10W
C810 330pF
D807 BAV99PT
OP2
R857 0 1/10W
R825 9.1K 1/10W
+5V
D810 LL4148
R830 4.7KΩ 1/8W
C819 1uF
Q816 AM4910N-T1-PF
Q815 AM4910N-T1-PF
D815 LL4148
R837 39 1/8W
R836 0 1/10W
Q809 PMBS3904
Q810 RK7002
Q811 PMBS3906
D811 LL4148
R829 100K 1/10W
C814 5pF/3KV
R827 680 1/8W
R854 1KΩ 1/10W
CN804 CONN
R831 3K 1/10W
C820 330pF
D812 BAV99PT
OP3
R832 9.1K 1/10W
C831 4.7uF/16V
C834 4.7uF/16V
C840 4.7uF/16V
C841 4.7uF/16V
R841 0 1/10W
D816 LL4148
R839 100K 1/10W
C825 5pF/3KV
R838 680 1/8W
R856 1KΩ 1/10W
CN805 CONN
R840 3K 1/10W
C826 330pF
D817 BAV99PT
OP4
R842 9.1K 1/10W
C827 560pF
R852 300K 1/4W
Q817 PDTC144WK
SST
R851 0 1/8W
Q812 RK7002
Q813 RK7002
Q818 RK7002
C835 NC
R843 100K 1/10W
Q814 PMBS3904
D818
R846 200K 1/10W
R845 1M 1/8W
C828 0.1uF/25V
D823 1KΩ 1/4W
LL4148
D819 LL4148
D820 LL4148
D821 LL4148
D822 LL4148
JP801 0 1/10W
JP802 NC
R844 5.6K 1/10W
R847 5.6K 1/10W
R850 13K 1/10W
R848 220 1/10W
C829 0.1uF/25V
R849 220 1/8W
C830 0.1uF/25V
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Sheet 1 of 1